# PULP & PAPER

January 23, 1961

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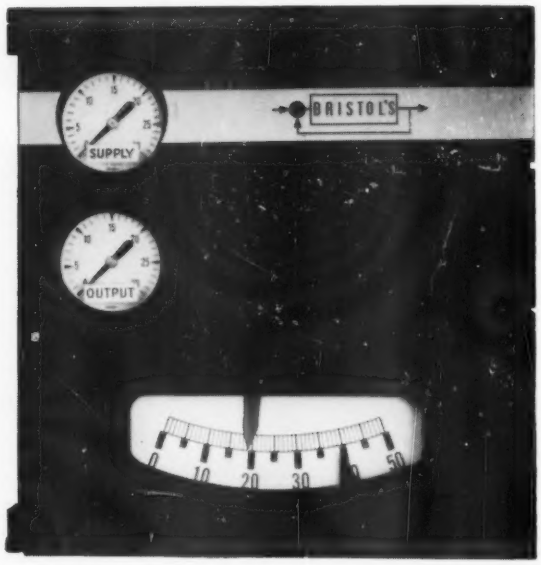
# NEW BRISTOL'S

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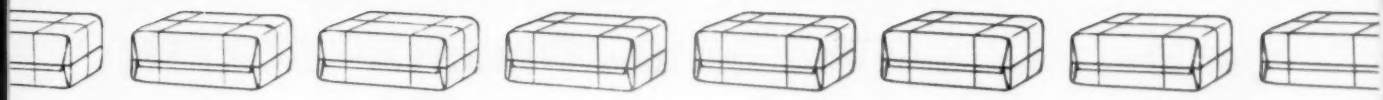

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# NEWS DIGEST...

**Eleven paper companies are interested in building** pulp and paper mills in California, according to a reliable report to PULP & PAPER. Their identities have not been announced as yet, but there has been considerable activity re stream improvement studies on the Sacramento River. Logical sites might be above Fibreboard's San Joaquin mill, to be near raw materials.

Kimberly-Clark, of course, announced its plans to build a mill at Anderson, Calif., following merger with Ralph L. Smith Lumber Co. Other mills will probably be among industry's top 20 which do not as yet have primary producing facilities along Southern Pacific coast.

**A dynamic resurgence in the nation's economy will** be first order of the day for the new administration. Anxious to get off to a good start, President Kennedy will go all out to solve the nation's economic woes.

**The business climate will be better at end of 1961** than it was at the end of 1960, says one paper company president. This jibes with opinions of most economists. They see poor first quarter continuing until about mid-year, then a decided upturn for the second half.

**There may be a "recount" of 1960 production** figures. Reason: longer-than-usual holiday shutdowns may drag production figures now placed at 34.5 million to 34.4 million tons or lower.

**Pulp market is relatively quiet since the recent price** adjustments, notes one observer. Reductions have brought a momentary stability in pulp prices, he says. Prices are now down to a point where costs will force mills to stay in line. Demand for market pulp is about the same—moving right along.

**Strong pulp demand continues in Germany but** leveling off is seen in England and France. Swedish producers say they are all sold out for 1961, but, says one pulp consumer, "That sounds like a seller's story."

**New enamel paper machine for Consolidated** Water Power & Paper Co.'s Wisconsin River division at Whiting, Wis. Trimming 131 inches, the Beloit machine will "definitely be running before year-end," Consolidated told PULP & PAPER. The $7 million project will boost enamel paper capacity 25,000 tons to more than 300,000 tons. Consolidated's on-machine coating process will be used. This is their 11th enamel paper machine, third at the Whiting division.

**Machine coated paper capacity now 2,317,000 tons** will be boosted this year to 2,251,000. New machines will add 77,000 tons, improvements another 75,000. By end of 1962, capacity will climb to 2,351,000 tons and by end of 1963, to 2,385,000 tons. These figures are based upon the latest capacity survey of the APPA.

. . . . . BUSINESS

# Incongruous '60: Records, But . .

## profits were down; export market brightens '61 picture

WASHINGTON—It was an incongruous year. Paper and paperboard production may reach a record 34.5 million tons in 1960, but the profit margin was lower than most had hoped.

Last week the Department of Commerce released its annual year-end review, summarized what most industry leaders have known and been talking about for weeks now and forecast what many of them have been predicting: Paper and board production is expected to reach a record 35 million tons this coming year but the indicated rate of increase of 1.5% over 1960 will be far less than the long-term historic trend of 3.8%. Unless basic national economy improves greatly over what is anticipated, both demand and production will go through a second lower-than-average growth year in 1961.

Said W. LeRoy Neubrech, asst. dir. for pulp, paper and paperboard of the BDSA, "Looking ahead to 1961, very little change is anticipated in total economic activity . . . a modest increase is expected in consumer expenditures . . . a fair gain in aggregate construction activity (is expected) . . . continuation of the upward trend in U.S. exports of various grades of paper, paperboard appears likely . . . " The most hopeful result: A moderate degree of optimism for the industry's 1961 market outlook, only slight advance in imports.

**Lower per capita use is expected** this coming year. With a net increase of some 500,000 tons over 1960's estimated 34.5 million tons, and consumption not expected to keep pace with population growth due to heavy inventories, experts say the per capita use will drop from the unprecedented 438 pounds per person in 1959 and 1960, to 435 pounds this year.

# RCI WETstrez Wet Strength Resins

WETstrez is RCI's new name for a group of highly efficient wet strength resins — formerly RCI BECKAMINE — that have years of proven performance in the paper industry.

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There were optimistic notes, however. Foreign demand for paper, board and woodpulp in particular has been growing and demand is expected to continue to increase. Actual volume of paper and board exports now has reached a substantial volume, an estimated 900,000 tons last year, an anticipated one million tons in 1961. Woodpulp in particular has shown strong growth. From 515,000 tons in 1958 it moved up to an estimated 1,150,000 tons in 1960, should increase substantially this year.

**A review of 1960 is important** in light of the modest changes anticipated for this year. Trends developed, new directions were taken by the industry, leaders began taking positive steps to overcome overcapacity problems, lower profit margins. Rather than singing the blues, they were looking for panaceas.

**TREND:** The quest for new products, keen marketing competition.

Many feel this may be the most significant "high gear" move of the year. It could not only eat up the capacity and create new markets, but also offset the inherent danger from outside products such as plastics, glass, metal attempting to regain the markets taken away from them by paper in past years.

**TREND:** Continued vertical and horizontal integration.

Companies continue to enlarge their commercial timber holdings to assure long-term pulpwood supplies; expand into converting operations, particularly in the container and packaging field. In addition, growing product diversification aimed at greater operating economies, production stability, continues.

**TREND:** The emphasis on plant modernization, to achieve greater operating efficiency, cost reductions in manufacturing and distribution.

**TREND:** Enlarged domestic capacity.

It continued through 1960 with substantial capacity additions underway and projected through 1963. But although additional capacity will be needed to meet long range projected demand, industry executives must be alert to future requirements, more judicious than ever in making such decisions, warns Mr. Neubrech. Production-to-capacity ratios declined during the year, prices on most grades of paper and paperboard were unable to advance to meet increased overhead in form of higher wages, fringe benefits. Keen competition apparent in 1960 will continue at stepped-up pace.

**TREND:** An increasing quantity of spot woodpulp offerings at prices materially below existing quarterly contract prices, comments Mr. Neubrech.

Pressure to keep established customers in the domestic market par-

## How economic factors influenced last year's business . . .

**Consumption was higher** . . . there was a general upward trend in disposable income and consumer demand. Consumption expenditures were some $14 billion higher than 1959. Both nondurable goods and service expenditures were appreciably higher.

**Fixed investment up** . . . There was a substantial rise in plant and equipment expenditures over 1959, actually nearly 10%, and aggregate of all fixed investment amounted to nearly $70 billion, a 5% increase over the previous year.

**Wide inventory swing** . . . Inventory accumulation rose to a sharp peak in the first quarter, fell a negligible amount in the summer, and in the final quarter a swing toward liquidation of inventories caused a retarding influence on demand.

**Federal buying rose** . . . Government purchases of goods, services, were major source of income throughout the year, particularly state and local purchases. In November, voters approved a record volume of bond issues—$3 billion of 3½ submitted.

**Foreign trade improved** . . . There was sharp expansion in exports, improvement in our merchandise trade surplus. Economic activity in Europe, Japan was a major factor. Biggest problem: Increases in gold losses, dollar liabilities.

## APPA-NPA Official Capacity Survey

| | 1959 | 1960 | 1961 | 1962 | 1963 |
|---|---|---|---|---|---|
| Total Paper and Board | 37,504 | 38,847 | 40,488 | 41,651 | 42,127 |
| Total Paper | 15,619 | 16,189 | 16,803 | 17,314 | 17,485 |
| Newsprint | 2,416 | 2,293 | 2,306 | 2,353 | 2,371 |
| Uncoated Groundwood | 814 | 901 | 848 | 912 | 966 |
| Uncoated Book | 1,723 | 1,874 | 1,909 | 1,935 | 1,939 |
| Coated | 2,024 | 2,099 | 2,251 | 2,351 | 2,385 |
| Fine | 1,784 | 1,888 | 2,105 | 2,154 | 2,170 |
| Coarse | 3,869 | 3,999 | 4,090 | 4,255 | 4,275 |
| Spec. Indus. & Absorbent | 750 | 846 | 903 | 915 | 919 |
| Tissue | 2,209 | 2,289 | 2,391 | 2,439 | 2,460 |
| Total Paperboard | 17,447 | 18,182 | 19,184 | 19,813 | 20,108 |
| Containerboard | 9,401 | 9,819 | 10,515 | 11,013 | 11,128 |
| Boxboard | 5,586 | 5,873 | 6,097 | 6,180 | 6,361 |
| All Other | 2,460 | 2,490 | 2,572 | 2,620 | 2,619 |
| Total Bldg. Paper & Board & Wet Machine Board | 4,438 | 4,476 | 4,501 | 4,524 | 4,534 |
| Building Papers | 1,582 | 1,556 | 1,550 | 1,550 | 1,559 |
| Building Board | 2,669 | 2,727 | 2,741 | 2,755 | 2,755 |
| Wet Machine Board | 187 | 193 | 210 | 219 | 220 |

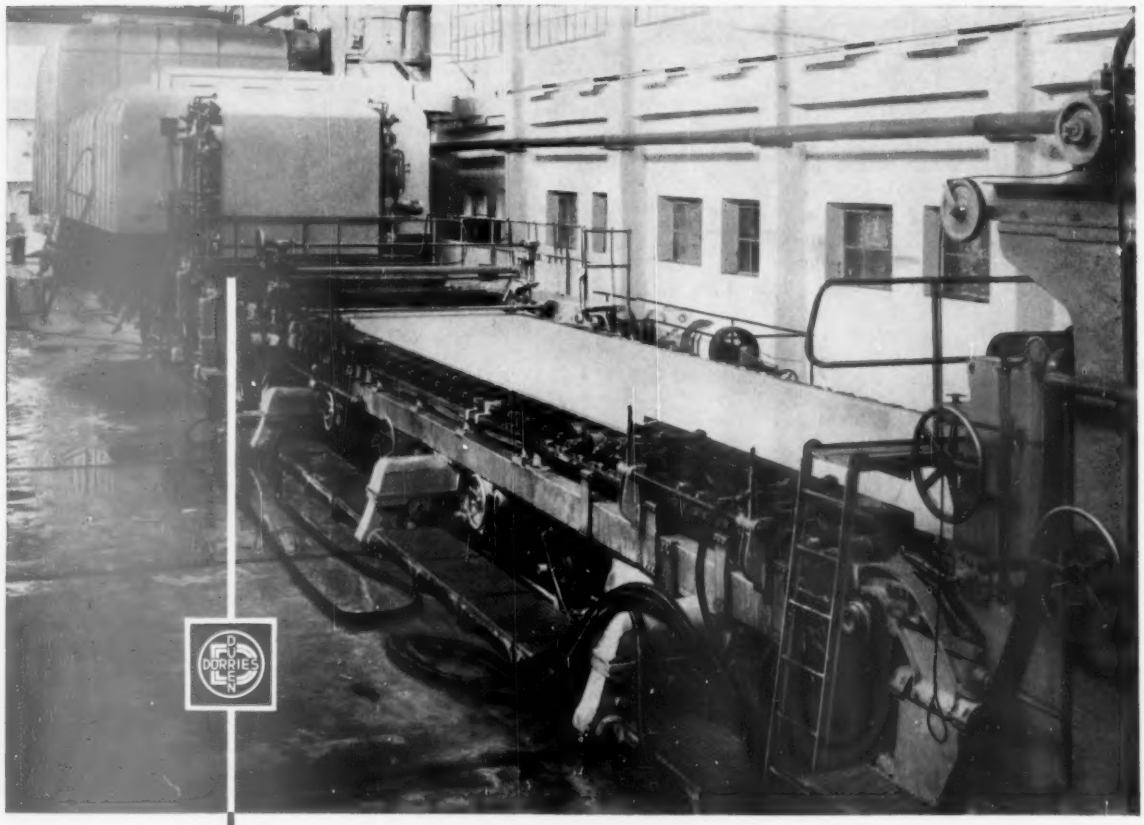
NOTE: Paper Capacity based on 310-day year; Paperboard on 313-day year.

Source: Joint American Paper and Pulp Association - National Paperboard Association Capacity Study - 1959-1963, Issued December 1960.

## Operating Rates since 1939

| | Historic basis 310-day capacity tons end of year | Production tons | 6-day Operating ratio |
|---|---|---|---|
| 1939 | 16,557,410 | 13,509,642 | 82% |
| 1940 | 16,890,970 | 14,483,709 | 86% |
| 1941 | 18,522,000 | 17,762,365 | 96% |
| 1942 | 18,772,000 | 17,083,862 | 91% |
| 1943 | 18,830,000 | 17,035,688 | 90% |
| 1944 | 19,260,000 | 17,182,804 | 89% |
| 1945 | 20,282,050 | 17,370,965 | 86% |
| 1946 | 20,420,000 | 19,277,667 | 94% |
| 1947 | 22,025,476 | 21,114,000 | 96% |
| 1948 | 23,389,000 | 21,897,301 | 94% |
| 1949 | 25,048,000 | 20,315,436 | 81% |
| 1950 | 26,100,000 | 24,375,083 | 94% |
| 1951 | 26,789,000 | 26,048,143 | 97% |
| 1952 | 27,854,000 | 24,418,383 | 88% |
| 1953 | 29,089,000 | 26,604,583 | 91% |
| 1954 | 30,025,000 | 26,876,242 | 90% |
| 1955 | 30,900,000 | 30,178,102 | 98% |
| 1956 | 32,600,000 | 31,441,192 | 96% |
| 1957 | 34,300,000 | 30,666,469 | 89% |
| 1958 | 36,100,000 | 30,814,366 | 85% |
| 1959 Prel. | 37,500,000 | 34,007,068 | 91% |
| 1960 Est. | 38,800,000 | 34,500,000 Est. | 89% Est. |
| 1961 Est. | 40,488,000* | 35,000,000 Est. | 86% Est. |
| 1962 Est. | 41,651,000* | | |
| 1963 Est. | 42,127,000* | | |

*Joint APPA-NPA Capacity Study, Dec., 1960
Source: Writing Paper Manufacturers Assn.



## DORRIES Paper Machines are an idea for solid design

Also this paper machine built for making M.G. papers of different grades at a speed up to 300 meters/min. has entirely come up to expectations. The same is equipped with all up-to-date means and of fine shape and heavy design.

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ticularly resulted in announced price cut in woodpulp prices (about 10%). "This reduced market pulp price should assist the nonintegrated segment of the industry to maintain its relative position within the paper industry," said Mr. Neubrech.

**TREND:** Intensified research to improve quality and meet razor-edge competition.

Stress is also being put on current and long-term market analysis, both foreign and domestic.

**TREND:** Continued overseas plant expansion.

Many important domestic manufacturers are studying overseas possibilities as a means for meeting rapidly growing demands for products not only in highly industrialized countries, but also in lesser developed ones, too. Size of U.S. investments is seldom recognized. From 1957 through 1960, U.S. paper and allied products manufacturers invested $414 million in plant and equipment overseas, more than 80% of it in Canada. Latin America was the second largest investment area, European Common Market area the third.

# Woodpulp up 5%, exports may increase

U.S. production of woodpulp increased 5% in the first nine months of 1960 over the same period of 1959. One reason was sizable exports going mainly to European countries, reported BDSA analyst John R. Mutzabaugh. Principal conditions motivating strengthened European demand are expected to continue, should provide substantial pulp markets in future.

Production of woodpulp in the U.S.: 18.9 million tons in January-September 1960, an increase of 900,000 tons from the same period in 1959. Exports: 859,000 tons, an increase of 380,000 tons. Exports to Western European countries: 534,000 tons, of which 72% was paper grade chemical pulp.

Say U.S. Foreign Service posts: Rising pulp demand in European countries stems partly from a need for more and better quality paper and board products used in the prepackaging and shipping of items sold in self-service stores.

More than 6,000 self-service stores are in operation in the United Kingdom, and conversions are taking place at a rate of 100 a week. West Germany has 17,000 self-service stores, probably more than any other country in the world except the United States. Its demand for bleached pulp continues to increase as conversions to self-service mount.

On the basis of the growth pattern in the U.S., Western European pulp demand attributable to self-service store operations should increase for many years. A conservative estimate places the number of self-service food stores in the United States at 250,000, or one store for each 700 of the population. Including all types of self-service operations, West Germany has one store for each 3,200 persons, the United Kingdom one for each 8,500.

**A favorable turn in paperstock**
trends in January-September was the 25% increase in exports over the first nine months of 1959. Shipments to established foreign outlets increased, and some new markets were acquired in Western Europe. At least two European countries where paperstock use historically has been 25% of total paper and board, raw material consumption increased use to over 30% in January-June 1960.

U.S. trends in paperstock demand other than for export were not encouraging. Mill receipts were down 3% from January-September 1959, consumption was off 2%. End-of-September inventories were up 3%, an improvement since the first of the year, when stocks were 24% above a year earlier.

**Mills received more pulpwood**
in the first nine months of 1960 than in any preceding comparable period. Total: 30.9 million cords, a rise of 2.8 million cords or 10% above January-September 1959. Eighty percent of the increase went directly into woodpulp production and the remainder to yard inventories. This is the second time since 1957 that end-of-quarter mill inventories of wood have been above year-earlier levels, June 1960 having been the first.

# Industry seeks panaceas for overcapacity

NEW YORK—As the first weeks of the new year ticked by, it became more and more apparent that industry trendmakers were taking positive steps to offset their most worrisome threat—overcapacity.

One thing was sure—they recognized full well that the capacity problem will continue to grow as long as the industry's production outpaces the economy's appetite to consume the product. Panaceas were beginning to take form.

One answer seemed to be increased extension of paper operations into the distribution and converting fields. Another was a harder emphasis than ever on marketing and new product development.

Product development took on even more important tones for there was a creeping realization by many that the per capita paper consumption, now well over the 400 lbs. per year mark, is becoming increasingly more vulnerable to attack from without the industry. Materials once replaced by paper have not been standing still. Plastics, glass, metal, which have lost valuable markets to paper in the past 10 years, will be making greater effort than ever to win them back. And as per capita consumption increases, so will the effort.

**"That's the dark side"**
said another. "Take a look at some new uses for paper, like some of the exotics. Take a look at what Kimberly-Clark and J. P. Stevens are doing on nonwoven disposable clothes. Look at Scott, too. And Mead. It's pretty obvious we can't—and aren't—static. As long as we stay up with times, beat the others to the punch with new uses and developments, we will keep the edge."

**Another trend developing**
is in the distribution and converting field, where profit margins have been running well over those of the industry supplying it. The recently announced merger of Champion Paper & Fibre Co. with Carpenter Paper Co. could mark a trend in the direction of horizontal integration, help overcome the increasing difficulty of major companies to crack the profit-margin barrier. . . . **continued on page 9**

# THIS PULP WAS MADE AT A MILL THAT DOES NOT YET EXIST!

**The mill will be our new 85,000-ton plant at Woodfibre, British Columbia. It won't be on stream until May, 1961—but when it is, it will turn out a paper-making pulp identical to the piece attached to this page!**

**Here's how we did it:** Since the equipment at our new mill will be so like that at our successful Jesup, Georgia operation, we simply shipped British Columbia wood to Jesup. There we used the Woodfibre process and sequencing to make a true advance copy of the exceptional new pulp, Fibrenier.

**New advanced pulps:** Fibrenier is but the first of a new series of paper-making pulps to come from this new mill, specifically designed to produce paper-making pulps of distinction, competitively priced. Like all pulps in our line (the world's most complete), Fibrenier results from years-ahead research . . . is backed by the self-same technical service, policy and management interest in the paper industry which have won Rayonier respect and confidence world-wide.

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But the big problem is still capacity and what to do about it. Said one leader last week: "The industry should be able to operate at 85% capacity and make a good profit. Last year steel operated substantially below capacity, didn't break its prices, and is reported to have had one of its best years. We must produce a better profit picture and we must learn to live with a certain amount of standby capacity. Right now prices are pegged too low to permit us to operate at a realistic capacity . . ."

What makes the picture even darker are projected figures for 1961. According to the U.S. Dept. of Commerce, the industry will produce about 35 million tons in 1961. On a 6-day week basis and on the projection that paper and paperboard demand will increase a million and a half tons this year, the operating rate will be about 86%. On a more realistic 6 1/2 day basis, however, it drops to nearer 80%.

In 1960, the industry had a capacity of about 37.3 million tons of paper and paperboard, produced some 34.4 million tons, which is about 90% capacity on a 6-day basis, 83% on 6 1/2 days. It appears likely that operating rates for the next two or three years may be somewhat disappointing. ■

# Leaders comment further on 1961 outlook

NEW YORK—West Virginia Pulp and Paper president David Luke struck on a common ailment in his year-end report. Although 1960 sales attained a record level for the eighth year in a row, West Virginia's earnings fell 6% below 1959. Soft business conditions in general, costly expansions were the chief reasons. Company earnings climbed to more than $250 million, from the 1959 peak of $233 million, but earnings declined from $11.8 million to $11 million. Per share earnings dropped off 14 cents a share.

Said Mr. Luke: "Steps taken to strengthen the dollar and retard inflation during the past few years appear to have also temporarily retarded growth. In any event, additional capacity in our own and other industries to meet anticipated demand became 'excess' . . ."

**On the Pacific Coast**

Puget Sound Pulp & Timber Co. president L. Turcotte sees a brightening of the inventory picture by the third quarter of 1961: "Inventories have been reduced to the point where it is entirely possible that by the third quarter some . . . product . . . will have to be replenished to good of the entire industry. Also it seems to be the general feeling that overall general business conditions will improve by mid-1961 and this, too, will have beneficial effects on consumption."

As for profits, Mr. Turcotte is not as optimistic. "Price reductions," he commented, "will have to come out of profits."

## Canadian leaders comment

**D. W. Ambridge,** president, Abitibi Power & Paper Co.: "No action has been taken to reduce the burden of taxation and no action has been taken by the Canadian government to correct the exchange rate on the Canadian dollar . . . It is difficult to see how any improvement in the financial condition of the industry can be expected in 1961."

**R. M. Fowler,** president, Canadian Pulp & Paper Association: "In 1961, there may be some hesitancy in the world demand for pulp and paper from Canada so total Canadian production might not exceed record highs of 1960, when total industry output increased by some 5%. Also during the past year there has been increased competition in the markets for pulp, although in most markets pulp demand is strong. Also, in recent months, there has been a temporary pause in the growth of U.S. newsprint consumption, coincident with the current stage of the economic cycle, but again the level of demand is high."

**Walter C. Koerner,** chairman, Rayonier Canada, Ltd.: "The general outlook for 1961 remains uncertain. Increasing competition on world markets is a major concern. In pulp, market equilibrium has not been reached and competition is very keen. We are also seriously affected by international economic and political developments over which we have no control." ■

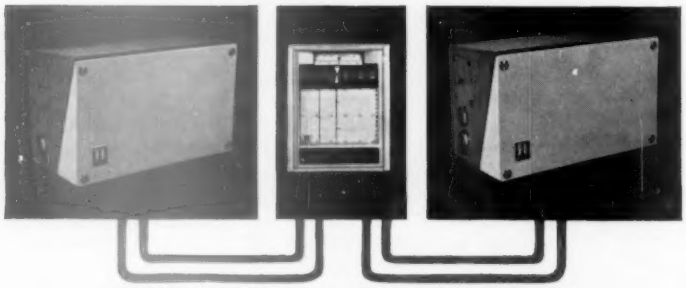


# New Mead Div. cracks products barrier

## with four new products developed by unique development concept

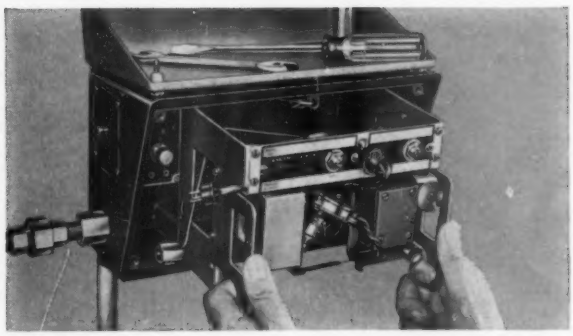
CINCINNATI—Mead Corp. has launched its new products attack with a vengeance. As industry leaders seemed more and more in agreement that new product and packaging concepts will be a leading factor in preventing some problems before they happen, Mead this month announced its New Products Div., proved it wasn't kidding around by also announcing four new products already developed by it.

Mead's approach is obviously a very positive one. Said its President, D. F. Morris: "The division is not merely making better mousetraps . . . its field is the entire realm of packaging beginning with manufacturing and continuing right on through sorting, assembling, packing, transporting, warehousing, advertising and merchandising a prod- . . . turn to p. 13



*ElectriK Tel-O-Set*—the true 2-wire system

# NO STAND-BY SUPERVISION



No stand-by supervision needed when you install an *ElectriK Tel-O-Set* Control System. Installation crews never have to open an instrument cover to hook up the line . . . instrument crews never have to touch an outside line to service an instrument.

It's all in the *Tel-O-Set* connection system. All process connections are entirely isolated from the inside of the instrument case. Installation crews can mount, pipe, and wire the various *Tel-O-Set* instruments without removing the cover. Instrument chassis can be removed for servicing without breaking any external process or electrical connection. Standardized parts, together with extensive use of quick-connect and plug-in design, minimize downtime and reduce spare parts inventory.

And there's more to the *ElectriK Tel-O-Set* economy story. Specifically, there's no external power required at any field-mounted *Tel-O-Set* instrument. Line power connection is made only at the receiver. Two-wire d-c transmission reduces installation costs and eliminates shielding problems. Also, the 4-20 milliamp signal range of the system gives a live zero and permits the use of the most reliable transistors available. The d-c signal can be fed into data handling systems and millivolt-actuated instruments . . . can be easily transduced to a standard 3-15 psi pneumatic signal to operate existing pneumatic systems.

Take a new look at your control problem with the *ElectriK Tel-O-Set* System in mind! Get the complete economy story from your local Honeywell field engineer. Call him today . . . he's as near as your phone. MINNEAPOLIS-HONEYWELL, 21 Penn Street, Fall River, Massachusetts.

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starts on p. 9 . . . uct. Without this broad approach, it is difficult to make a substantial contribution to the solution of packaging problems or to effect significant economies."

In effect, this becomes one of the first thoroughly integrated research projects, thereby goes far beyond what is normally considered the research and development field. To carry out the project, teams of highly skilled management specialists, designers, package materials experts, engineers, cost analysts and others have been assembled into a direct-line staff that breathes scope and breadth into the packaging approach. Within the walls of this one division, located at 4400 Marburg Ave., in the Oakley section of this city, products will be conceived, produced and marketed. Industry specialists will be certainly taking a hard, analytical look at its results.

**To assure maximum efficiency**

Mead's Technical Services Dept. occupies the same building, tests materials and products for such factors as strength, resistance to abrasion and puncture, effects of heat, cold, moisture and other environmental factors. While there is nothing new about these testing methods, the organization and unique concept of integrating the operation into a single unit likely will prove more efficient, faster, more effective.

Added to the testing dept. is a pilot plant where prototype machines to be used in manufacturing, assembling, filling and sealing containers will be built and tested. Mead's engineering dept. will handle this phase of the operation. Resources of Mead's 200 scientists, engineers and technicians in the Mead Research Center at Chillicothe will also be available to the New Products Division.

**Developed over a two year period**

Mead withheld detailed information on its project until its procedures were carefully set, start-up bugs ironed out of the operation. To direct it, Mead chose a seasoned packaging veteran, Allyn C. Beardsell, who had been associated with Container Laboratories, Inc., for ten years, two-and-a-half of them as president, a widely-respected author and packaging consultant and former instructor in packaging at N.Y. Univ. Among his ideas: Deliberate separation from Mead manufacturing plants and facilities so that his personnel is divorced from day-to-day production problems and therefore can concentrate on problems without distraction.

LOOKING AT NEW PACKAGE under development at Mead's New Products Div., Dir. Allyn C. Beardsell studies hexagonal shape, pinch-sealing characteristics.

**Product development will be**

starting with projects suggested by Mead salesmen who hear about them on customer rounds. What happens after that is a carefully planned development procedure: New Products team examines the concept from standpoint of feasibility, sales potential, technical criteria, and the director decides whether idea is worth pursuing; design concepts, patent situation, market, risks, competition, cost of development are all evaluated and if affirmative, decision goes to top management; next a system for handling the problem is devised, the concept becomes reality; the project is then examined to solve cost, manufacturing, pricing, marketing problems; finally, the idea goes to one of Mead's manufacturing facilities for full-scale production and marketing.

"We know the system works," said Mr. Beardsell, "we've used it . . ."

**These are new products . . .**

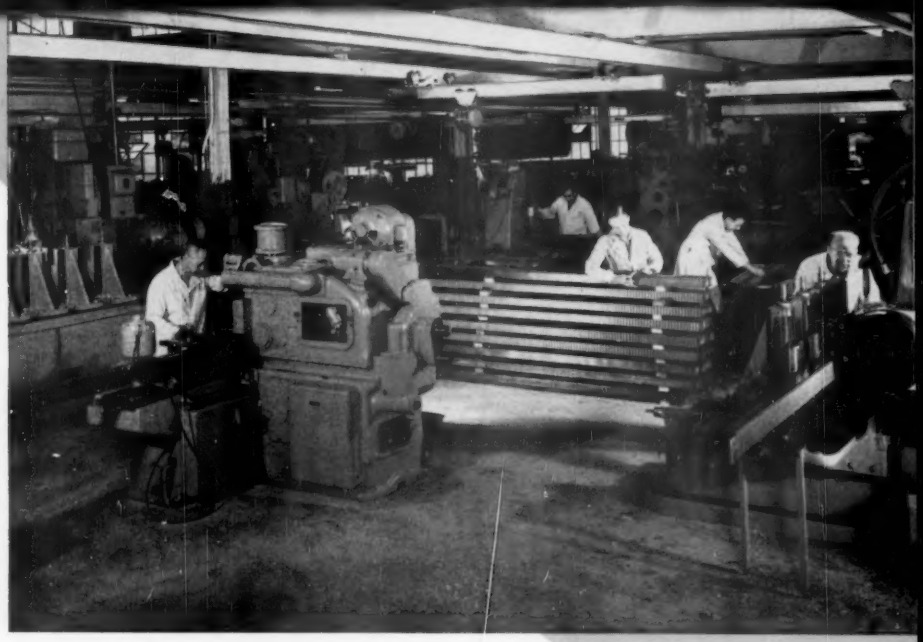
ITEM: An automatic nail packaging system to enable American nail manufacturers to resist foreign competitors, who have already seized some 40% of the American nail market. Mead claims it will cut costs as much as 50%. Key to the system is a heavy-duty corrugated box with three plies on bottom, two on each side. It includes a spout for nails, can be tightly closed to preserve contents from moisture, rusting.

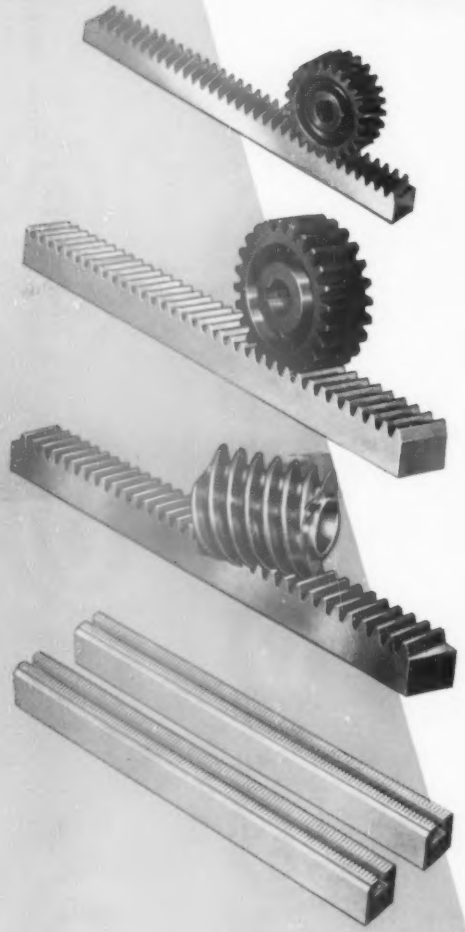
ITEM: Improved system for shipment of ice-packed food products which Mead claims will save hundreds of thousands of dollars through reduced labor costs, less spoilage. Wooden boxes normally used for shipping ice-packed foods will be replaced by solid-fiber paperboard containers which are unaffected by the water produced by melting ice, have excellent stacking capacity because of superior top and bottom strength, afford better insulation.

ITEM: Leakproof paperboard drums

ONE OF FOUR NEW PRODUCTS developed by Mead's New Products Div. is fibreboard container for poultry shipping which is designed to reduce shipping costs, spoilage. Type now used is shown in comparison.

# GEAR RACKS





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with improved and permanent "release" qualities for storing asphalt, resins, waxes, adhesives which are poured at temperatures up to 500° F., solidify when cold. It is lined with a patented release coating called "Cellu-Kote." In tests, Mead says a drum was filled, emptied 50 times with no change in release qualities.

ITEM: A paperboard drum for bulk shipment of frozen foods and non-food products. Mead claim: It will cut food processor's cost 15%, will replace metal pails formerly used, take up less space, resist bumps and dents better, be one-tripper thereby avoiding sorting problem. ■

# Blend-coated board, wax-laminated box

## are among other new products sparking market breakthrough

Elsewhere on the new products front, the industry was not standing at ease, either. In Evanston, Ill., Packaging Corp. of America announced a new paperboard which they claimed was "revolutionary," is made from a homogeneous blend of virgin pulpwoods; in Wisconsin Rapids, Wis., Consolidated Water Power and Paper's Paperboard Products Div. came up with a corrugated box that has a wax-laminated moisture barrier built into it.

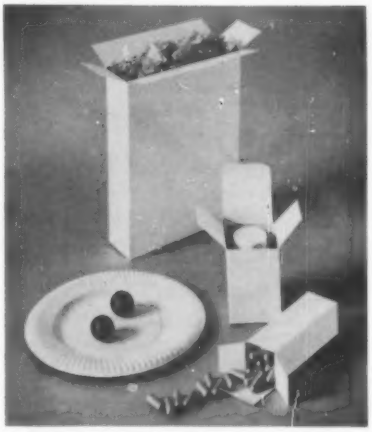
J. C. Morris, senior v.p. of PCA, said extensive testing of its new coated North Brite blended paperboard has proved it to be "two or three years ahead of the industry." Reason: Superior strength, rigidity with thinness, lightweight. In addition to carton use, the new paperboard is designed to make formed food plates and trays.

Coating of the board's exterior surface assures ink holdout characteristics for precise printing, illustrations, trademarks, other promotional matter. Rotogravure and offset printing are particularly effective.

**The product is of special interest** to industry observers since it is the first paperboard in the nation made of a blend of cold soda pulp and bleached kraft pulps, coated and utilizing a newly developed method of continuous impregnation of wood chips. It is produced at PCA's fully-automated Filer City, Mich., mill.

Consolidated's new box, marketed under the name Consobarr, is now being used by Nekoosa-Edwards Paper Co. to give superior moisture holdout characteristics essential in the shipment and storage of fine papers.

**Advantages of Consobarr** in addition to its protective qualities against moisture vapor and gases, are its cleanliness and its relatively easy waste disposal properties. A special high-melt wax blend is used to obtain good moisture-vapor transmission rates. Other materials, claims Consolidated, would require much heavier applications and higher costs to obtain the same rates.



NEW TYPE PAPERBOARD made from blend of virgin pulpwoods has superior strength, thinness, lightweight. Called North Brite by PCA, it is aimed at pharmaceuticals, food processors.

**A bantam-weight corrugated pallet** which provides industrial shippers with a low cost and easily transportable base capable of carrying strapped loads as heavy as 10,000 pounds, has also been introduced by Packaging Corp. It is called Econo-Pal, weighs only three or four pounds, is far below conventional wooden type pallets in cost, can be shipped by any method of transportation.

One man using a staple gun can assemble the Econo-Pal in a few minutes by simply folding and stapling the single die-cut and scored sheet as directed. An optional custom assembly jig enables two workers to assemble the pallet in four minutes.

**In the fine paper field** Ecusta div. of Olin Mathieson at Pisgah Forest, N.C., has announced a new lightweight paper for commercial offset printing, with bulk and built-in stiffness for easy handling on press. Ecusta's claims: Printers can use techniques similar to those used for heavier papers; presses need fewer adjustments than with other lightweights, folding and collating operations can be speeded up.

The new paper, tested for the past nine months, costs less per sheet than standard weight papers and its weight reduces mailing costs. Possible markets, says Ecusta: Books, catalogues, mailing pieces, plant newspapers, prospectuses, annual reports.

(See PULP & PAPER's special report on the paper machine that produces this lightweight paper, April 1959.)

**Continuous pulping of sawdust** has been reported by Fiber Research in Seattle, Wash. Using a new type continuous digester, a strong pulp with 1.6 to 1.8 fiber length from sawdust has been produced with strength approximating 80% of conventional kraft pulp, says Edgar G. Putnam, director of research and development.

"With this strength and these above-average fiber lengths for sawdust pulp," explains Mr. Putnam "we are encouraged to believe it is readily adaptable for newsprint furnishes, container stock, writing paper and also as a blending medium."

Studies have been made for several months using the company's Putnam-Greaves continuous digester. This digester was developed by Mr. Putnam and Fred G. Greaves, engineering consultant. The digester operates at 300 psi working pressure and features low power input and low maintenance.

Fiber Research is in its second year as an independent firm specializing in research, development, chemical analysis and engineering for the pulp and paper industry.

Glen T. Sparrow is director of engineering. Fiber Research is located at 1501 Eighth Avenue South, Seattle, Washington.

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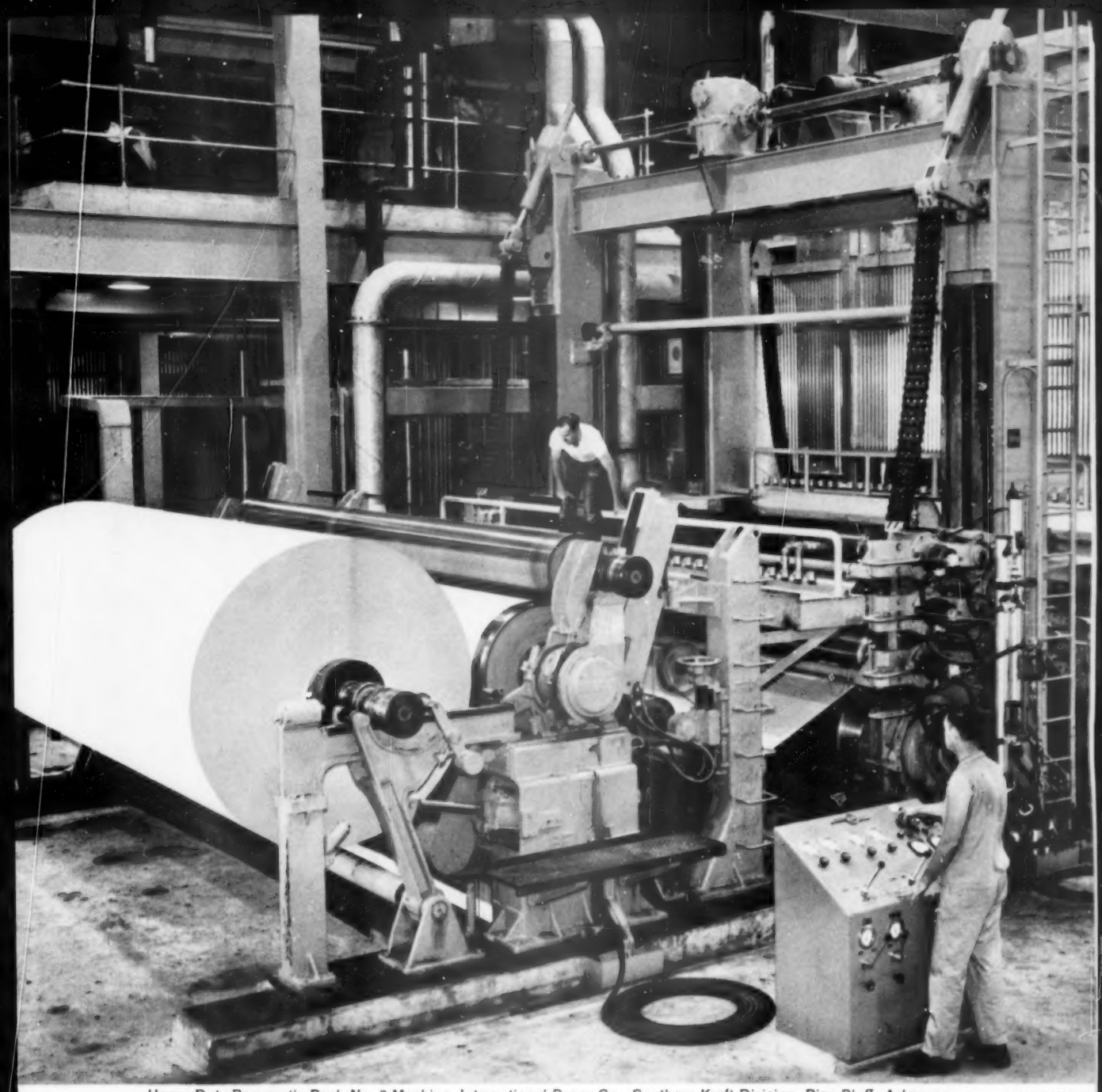
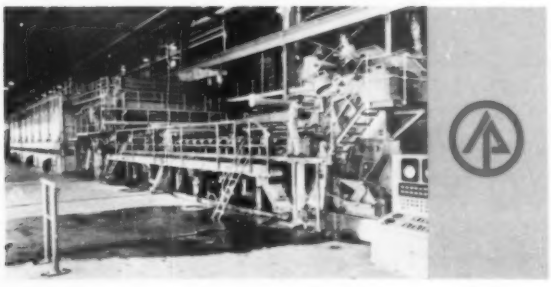


Heavy-Duty Pneumatic Reel, No. 3 Machine, International Paper Co., Southern Kraft Division, Pine Bluff, Arkansas S. R. CHRISTENSEN

# International Paper Company

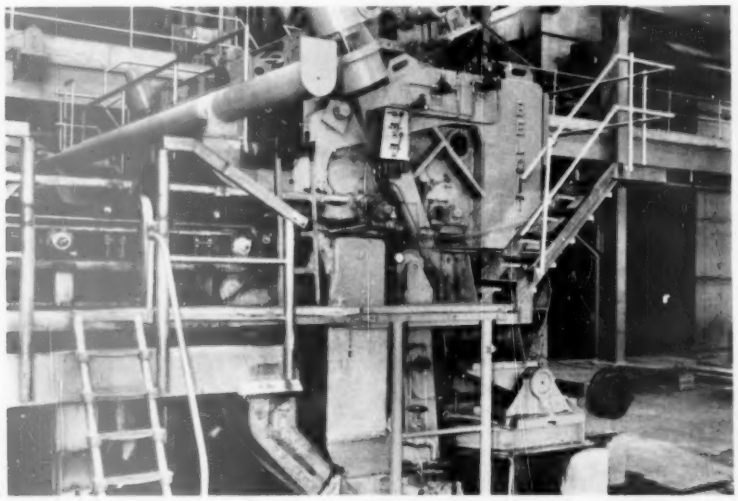


## Southern Kraft Division, Pine Bluff, Arkansas

Pine Bluff's new 209" Fourdrinier paper machine is equipped to manufacture newsprint and directory paper to meet the expanding demand for these grades in the South. This is the third Beloit machine in operation at Pine Bluff. The first two machines began operation in mid-1958, producing newsprint and bleached kraft paperboard. For further views of the new machine, please turn the page.

# ...some views of the new 209" Beloit Fourdrinier paper machine at Pine Bluff

(a) Beloit patented air-cushioned controlled-flow inlet showing a portion of the cantilever-type Fourdrinier. Design speed of this machine is 2000 fpm. (b) Twin open side Beloit calender stacks. The stacks are equipped with patented nip relief arrangement. (c) International Paper Company's Pine Bluff Mill. The new machine room is situated at left foreground. (d) Beloit Eastern Corporation 6000 fpm Model L Winder and heavy-duty unwind stand. (e) Twinver press arrangement; other press features include automatic suction pick-up and third suction press.



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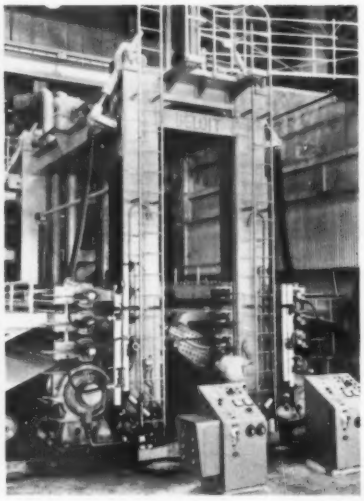

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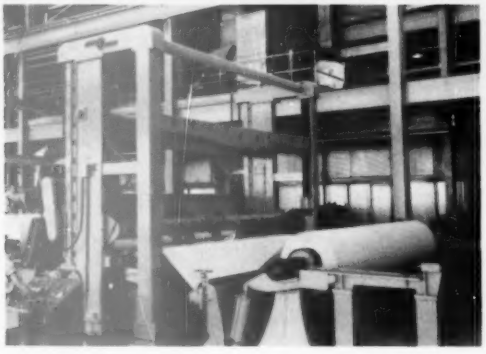

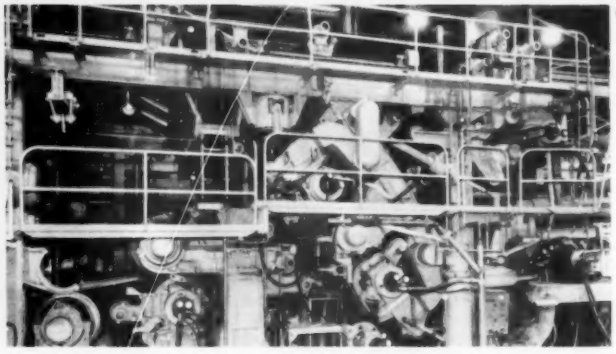

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*This insert lithographed on International Ti-Opake.*

# Sulphite League plans $185,000 budget

APPLETON, WIS.—An increase of $25,000 has been voted for the 1960-61 budget of the Sulphite Pulp Manufacturers' Research League. Outlay for the current year will be $185,000.

It was decided at the League's annual meeting in December to hike dues in an effort to meet the increased level of research.

Some $2,250,000 has been spent by the League on stream improvement studies since its founding in 1939, said Stanton W. Mead, president of Consolidated Water Power & Paper Co. Mr. Mead is president of the League, which represents firms producing more than 40% of all U.S. sulfite pulp.

Today more than 20% of spent liquor produced in the U.S. is processed for pollution abatement, Mr. Mead told the group. Wisconsin mills lead the nation in this conservation effort. About 50% of all collectible liquor in the state is used in by-products production, while another 20% is treated by the mills to reduce its oxygen demand before entering the streams. Said Mr. Mead: "By-product plant construction in process or planned will substantially boost these figures."

**League officers reelected . . .** President—Mr. Mead; vice president—W. R. Haselton, vice pres. and gen. mgr., Rhinelander Paper Co.; secretary—John G. Strange, president, Institute of Paper Chemistry; treasurer—P. M. Chiuminatto, Charmin Paper.

Chosen to the board of trustees was Loren Forman, president of Coos Bay Pulp Corp. and gen. mgr. of the West Coast div., Scott Paper Co. ■

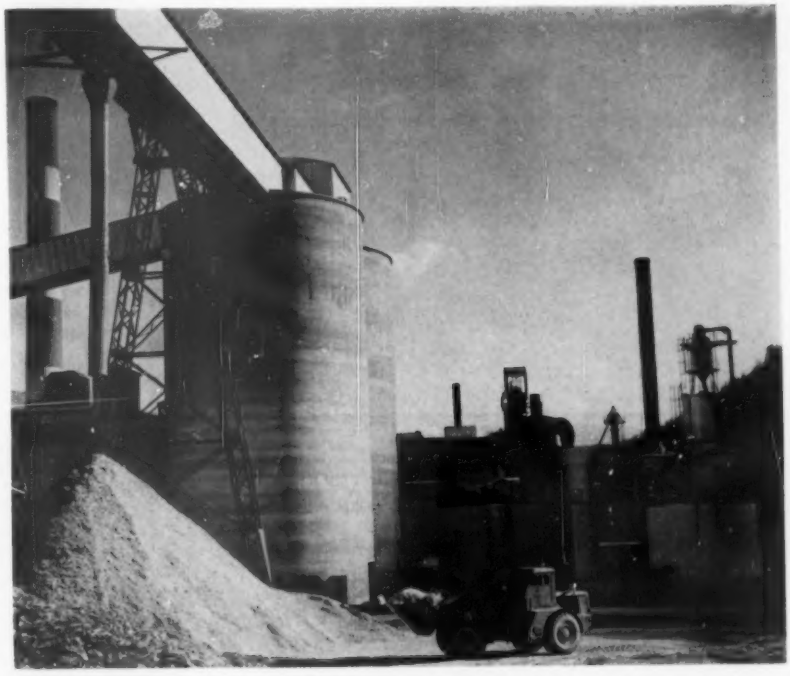


# Several mills projected for British Columbia

By CHARLES L. SHAW, Editorial Director, PULP & PAPER

VANCOUVER, B. C.—Recent decline in kraft pulp prices may defer decisions on one or two British Columbia mill projects that, under more favorable market conditions, might already have been announced. Tahsis Co.'s proposed mill on the west coast of Vancouver Island is most likely to get under way first. It would use extensive resources of the Gold River valley.

H. Friser Frederiksen, for several years head of the Tahsis Co's. operations in British Columbia, with head office at Vancouver, gave the mill project close study, although he was always reticent to discuss it. Tahsis Co. is a subsidiary of the Great East Asiatic Co. of Copenhagen and Mr. Frederiksen was recently appointed general mgr., a fact which augurs well for an early start on the pulp mill as soon as the picture clears.



CELGAR'S 500 TPD MARKET PULP MILL will soon be in operation at Castlegar, B.C. Here, chip piles are being built-up in readiness for start-up. Nearby sawmill, in operation by mid-summer, will supply 10% fiber needs.

**An early decision is scheduled** on the Canadian Collieries Resources project for Union Bay, east coast of Vancouver Island. Although there have been proposals that a small mill might be established first, CCR management is said to favor a 500-ton mill and postponement of action until such time as such a large operation can be satisfactorily financed.

There is also a good chance that a mill will be built near Prince George. An industrial development committee there has assembled data supporting such a project and the provincial government is ready to give support short of a direct subsidy. A mill at Prince George would be important in turning sawmill residue into profitable production and it would also produce freight for the government-owned Pacific Great Eastern Railway.

**Vacillating provincial government** policies have delayed in this Prince George area some pulp mill construction programs, according to Larry deGrace, prominent spokesman for the Northern Interior Lumber Mfrs. Assn. He told the Western Forestry and Conservation Assn's annual meeting that 700,000 tons of pulp could be produced a year in this district from residue of sources of sawmills operating there.

Government officials contend that Prince George is one of the most

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logical locations for the pulp industry, but Mr. DeGrace complained there has been some reluctance by the government to establish fixed stumpage rates or provide other guarantees likely to encourage capital investment.

Hugh J. Hodgins, vice president, timber, Crown Zellerbach Canada, agreed that northern regions deserved closer scrutiny as a pulpwood source and said that more access roads were needed to hasten this development.

H. M. Pogue, B. C. forest service, said that use and intensive management of all existing commercial forests of northern B.C. would permit a sustained wood harvest of 1,300,000,000 cu. ft. and urged re-examination of forests of the southern part of the province, particularly in the expansion of the pulp and paper production based upon use of mill residues, refuse, pulpwood and salvage. The forest industry there still leaves as much residue in the woods as it uses, he says.

**At Whitecourt, Alberta** pulp and paper mill construction will start in May, according to Gordon McNabb, who will be president of the new company. Mill will cost $38 million and have 300 tpd capacity. He predicts Alberta may have "at least 10" new pulp and paper mills by 1970, although only one (North Western Power & Pulp Ltd. at Hinton) is in existence.

**Canadian Forest Products, Ltd.** announces it will build a pulp mill at Grande Prairie, where it already operates a plywood plant, and **Alberta Pulp Mills Ltd.** has been negotiating for a mill at Rocky Mountain House.

**Dominion Tar & Chemical** is buying Prairie Fibreboard, Ltd. for $2,250,000. Dominion is controlled by the E. P. Taylor group of Toronto, which also directs B.C. Forest Products and plans to spend more money to get Prairie on a profitable basis, regarding move as a long term investment. Prairie got started in Saskatchewan in 1956 to use wheat straw to manufacture insulation board and similar products. But plant in Saskatoon had financial and technical troubles. Wheat straw could be used satisfactorily only to a limited extent. ■

# Industry budgets $700 million for '61

The paper and allied products industries are currently spending at the rate of about $700,000,000 for new plants and equipment. This is an overall increase of about $150 million for the same period in 1959, and about at the same level for 1960. According to the official plans of the industry, as outlined in the new joint capacity survey of the APPA-NPA, detailed elsewhere in this issue, some 1.5 million tons of new capacity are expected to be added this year for paper and paperboard, slightly more than 500,000 tons of new pulp capacity. The single biggest increase this year in the market pulp sector will come not from the U.S. industry itself, but from Western Canada when the Celgar market pulp mill adds some 500 tpd of new capacity.

**Olin-Mathieson** is changing its West Monroe, La. pulp and paper mill from log to outside chip storage. Sandwell International will handle engineering. To be completed this year, plant will bark and chip 1,450 cords of pulpwood/day. Two drum barkers, two 100-in. chippers and pneumatic conveyors for chips and barks will comprise major equipment.

**Columbia River Paper Co.** bucks trend by negotiating sales of its wholesale lumber and millwork manufacturing division at Salem, Ore., to provide space for possible expansion of pulp-paper production. Firm closed Salem sawmill in 1955. Most firms are modifying and broadening their industrial processing scope.

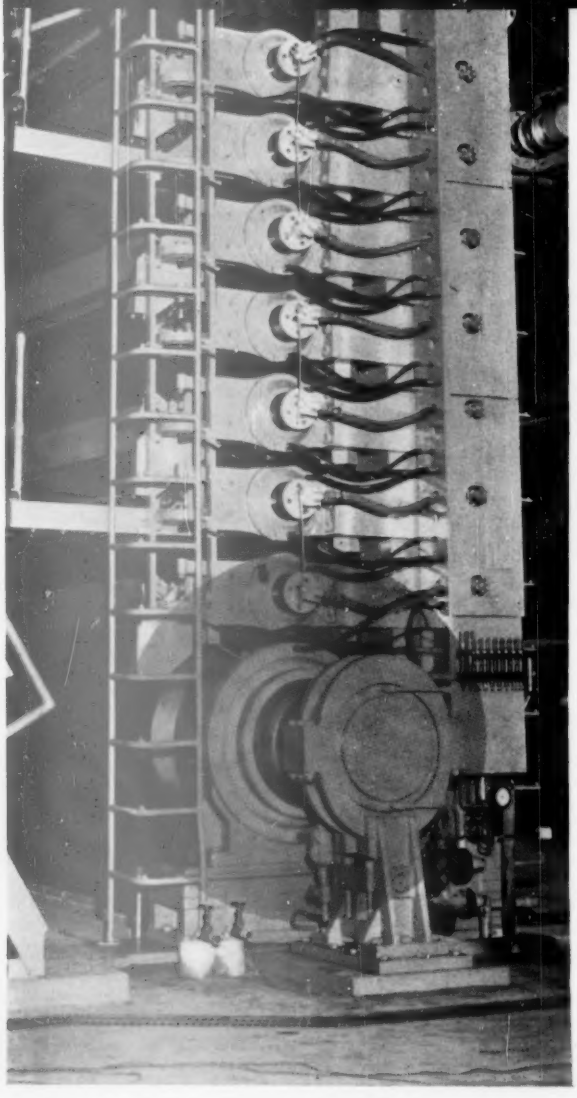
EXPANSION OF CHEMICAL BYPRODUCTS has just been completed by Crown Zellerbach Corp. with start-up of two such chemical plants at its Bogalusa, La., pulp and paper mill.

**Boise Cascade Corp.** expects to start up the new E. D. Jones Condi (continuous digester) at its Wallula, Wash. kraft mill. When this expansion phase is finished this year, mill expects to boost output of kraft papers from 200 tpd to 375. Higher pulp yields because of more uniform processing and savings in steam and fuel are some anticipated advantages of continuous cooking. Modernization cost: more than $5 million.

**Crown Zellerbach Corp.** further diversifies its forest products production in Pacific Northwest by entering plywood field. Addition will be at CZ's St. Helen's, Ore., green veneer mill. Capacity will be 10 million sq. ft. of sanded plywood/month. Completed is scheduled for fall, 1961. Cost: $2¼ million.

**Crown Zellerbach Corp.** has two new chemical plants in production in Bogalusa, La. using residuals from its nearby pulp and paper mill. New facilities have capacity of 10 million lbs. of dimethyl sulfite (DMS), 5 million lbs. of dimethyl sulfoxide (DMSO) and one million lbs. of methyl mercaptan (MM). These are largest installations by CZ's chemical products division. **continued on p. 25**

*Here's How the* **ACCRA-NIP*** *calender roll bending control reduces operating costs*

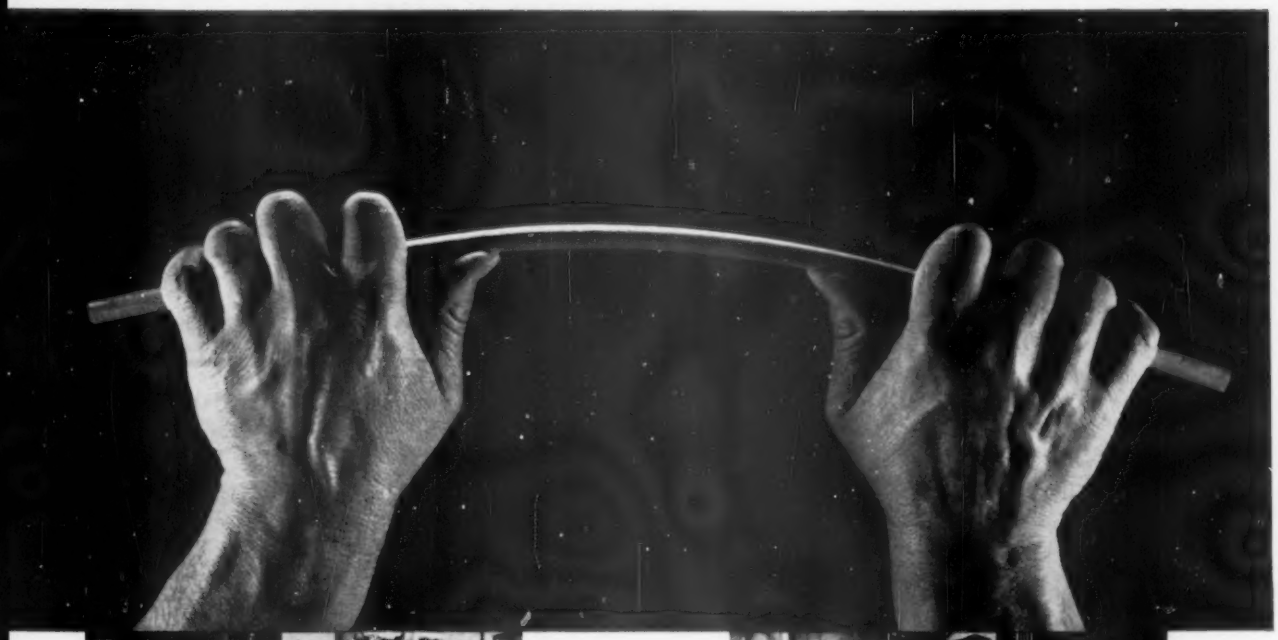


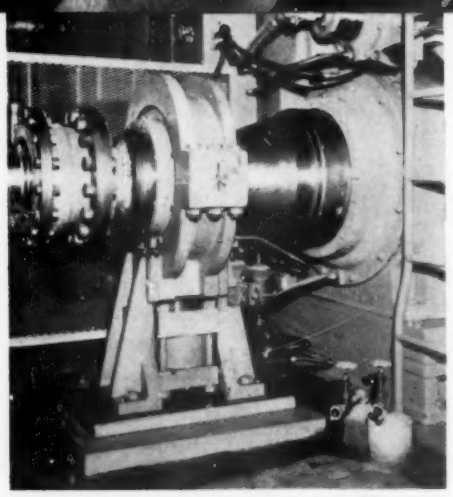
## You Get a Uniform Sheet on Every Grade Change WITHOUT REGRINDING CROWNS

*This significant new Black-Clawson design concept can help reduce the profit squeeze in many a paper mill. The ingenious Accra-Nip bottom roll bending device varies the crown automatically to suit grade change operating conditions. Here are the cost-cutting advantages.

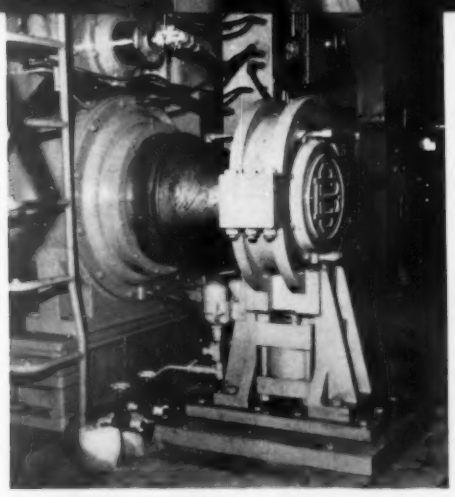
- No regrinding of roll crown when changing number of nips or loading.
- Only one bottom roll crown.
- Crown corrections made at console while calender is running.
- All corrections made at one place . . . the bottom nip.

* Trade Mark





Drive side load cylinder and bearing



Load cylinder and bearing . . . tending side

***Here's How it Works*** — Bottom roll journals are extended beyond main roll bearings. A load bearing is mounted on each journal outside the main roll bearing and connected to floor mounted hydraulic cylinders. Individually controlled, they load the journals *up* or *down* thereby changing the amount of crown across the top of the roll. Get all the facts on this important new development and learn how Accra-Nip control can reduce your operating costs. Contact The Black-Clawson Company Paper Machine Division, Watertown, N. Y., today.

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**BLACK-CLAWSON**

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ELECTRICAL PULPS

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YOU CAN GET ALL OF THESE SOFTWOOD KRAFT PULPS FROM DRYDEN

We are sure you know about the high quality of Dryden Bleached Sulphate Pulp. But did you know that you can also make Dryden your single source of supply for many other kraft pulps?

*Dryden Unbleached*—widely recognized for its high tensile strength—for everything from twisting tissues to boxboards.

*Dryden Electrical Pulps*—tailor-made for cable wrap, transformer board and capacitor tissue.

*Dryden's Other Specialties*—formulated to meet many unusual requirements. (We produce pulps for anti-tarnish papers, for example.)

We would be glad to make up a single boxcar shipment of several of our pulps for you to try in your own operations.

**DRYDEN PAPER COMPANY, LIMITED**

DRYDEN, ONTARIO, CANADA

SOLD BY: **Anglo Paper Products, Ltd.**

2055 Peel Street, Montreal 2, Quebec

The new plant uses black liquor from kraft recovery system, converting part of its lignin to DMS. Oxidation of the DMS produces DMSO. Concurrently with the DMS, a small amount of MM is produced from the lignin.

DMS is noted for its ability to dissolve inorganic salts, such as aluminum chloride, silver nitrate, and mercuric cyanide. It is also used in odorants for natural gas. DMSO's use is in manufacture of synthetic fibers, agricultural chemicals, insecticides, paint strippers, brake fluids and in petroleum refining. MM is sold primarily to producers of methianine, a supplement to poultry feed.

**Rome Kraft Co's.** expansion program at Rome, Ga., is expected to be completed soon. Included in the project is a newly-designed electrostatic precipitator which will recover about $1,000 worth of salt cake/day. Rayonier's Grays, Harbor div., Hoquiam, Wash. will start construction in March of its new $2.4 million pulp bleaching plant, increasing total value of construction projects now underway at this mill to more than $22.5 million. Now under construction are chemical recovery plant, warehousing facilities, shops and stores building, and a second paper machine to double present output. Bleach plant will feature continuous bleaching of about 200 tpd.

**St. Croix Paper Co.** at Woodland, Maine, has rebuilt its No. 1 newsprint machine to boost speed to 1,500 fpm. Fourdrinier was lengthened to take wire 99-ft. long. Ten new table rolls, epoxy resin covered, were added. An air cap dryer was put on No. 27 dryer.

**Keyes Fibre Co.** has installed a fourth boiler at its Waterville, Maine, mill. The Babcock & Wilcox unit is rated at 39,000 lbs.; earlier units are 26,000 lbs. steam each.

Overseas, **Tropical Timber Products** is reportedly considering adding a pulp and paper mill to contemplated veneer and lumber operations in Colombia. Its timber properties have been cited as one of best areas ever seen, with unlimited timber of finest quality. Paper mill would use all small trees that can't be made into veneer or lumber. Site would be near a port.

**Mosinee Paper Mills Co.** is building a water treatment plant which will enable it to make bleached papers of a higher brightness. Estimated cost is $350,000 for the 6 million gpd plant. In addition to eliminating brightness restrictions, new system will permit manufacture of greater variety of special industrial papers.

**Brown Co.** is installing a new pressure headbox on its 196-in. towel paper machine at the Cascade mill in Gorham, N.H. The new headbox, scheduled for installation about April or May, will be built by Valley Iron Works and is designed to increase speed and improve sheet quality. Cost: $150,000. Brown will also install a new $150,000 winder on its No. 3 paper machine at Cascade. ■



# Aerial attack "most effective" fire weapon

PRECISION WATER BOMBING DRENCHES forest fire as industry and government adopt new aerial tool to fight fires.

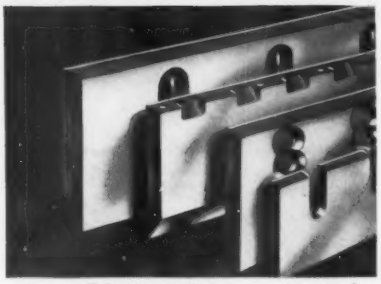
Millions of acres of timber lands have been saved from forest fires by airplanes and helicopters. What's more such aerial tools are just about the most important advance in forest fighting in 50 years, says the U.S. Dept. of Agriculture.

"Air Attack on Forest Fires," says that aircraft are now used for dropping water or fire-retardant chemicals on difficult fires. Today, says the U.S. Forest Service, a well-coordinated air-tanker-ground crew is an excellent combatant for certain types of fires; holding small fires until ground crews arrive; cooling down hot spots so men can enter an area and work safely; fireproofing local areas where spot fires are probable or laying a fire-retardant line in advance of fire.

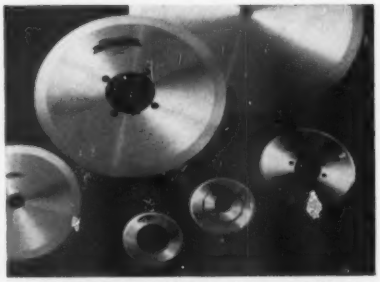
West Viriginia Pulp and Paper Co. has a light Stearman Trainer to fight fires on 300,000 acres of woodlands in North Carolina. With the new plane, water bombing can be used to drench a drop area 125-ft. by 50-ft. and leave surrounding air moist to point of saturation. It carries a 250-gal. payload of water mixed with a chemical wetting agent, says D. Y. Lenhart, West Virginia timberlands div. mgr. ■

Now there's an all-new member of the Simonds family of knives, saws and files—the brand-new Simonds "Si-Namic" paper knife. Here's a knife that incorporates a brand-new steel mix — developed and produced in Simonds own Steel Mill — and a new finish. Combined, they offer you the sharpest, smoothest, longest lasting cutting edge available — and at competitive prices.

Add to this Simonds dependable chipper knives and circular cutters and you can see why, more than ever, your Simonds Industrial Supply Distributor is your number one source of supply for dependable cutting tools.



Simonds T-18 chipper knives are extra tough for giving you more heavy cuts at high speed, for more usable chips and less waste dust.



Whether it's the thinnest tissue or thickest board, Simonds circular cutter, slitters and perforators cut smoothly, easily, truly. There's no better value for your cutter dollar.

Your nearby SIMONDS DISTRIBUTOR is your most dependable cutting tool supply source. His stocks and services are designed with your convenience and economy in mind. Call him FIRST for all your industrial supply needs!

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Well, you could have
knocked me over with a feather . . .

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**It's a new Glidden product especially made for paper coating**

**GLIDDEN ZOPAQUE® LD-C**

*SEE OTHER SIDE FOR MORE INFORMATION . . .*

SEE SAMPLE ON OTHER SIDE OF THIS NEWSPRINT PAGE...

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## LD-C

**an anatase grade of titanium dioxide made especially for the paper industry ...combining the best features of anatase and rutile grades for paper coating**

**NOW,** the better brightness of anatase $TiO_2$ is combined with the ease of dispersion and low viscosity features of rutile grades... in Glidden ZOPAQUE *LD-C.*

*LD-C* has properties comparable to rutile. It is equally well suited for on and off machine, size press and calender coating. Compatible with all other common paper coating pigments and adhesives.

Being an anatase grade, new *LD-C* is for coating all nonwaxing plain and printed paper and board. And *LD-C* is priced as an anatase. Some users are obtaining savings of up to 2¢ per pound.

Higher machine speeds, heavier coating weights and other advantages are inherent in new *LD-C.* To get the full story, or samples, call your Glidden representative or our Baltimore headquarters.

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# Open: 50 million acres of industry land

## for public recreation, reports AFPI in multiple-use survey

Multiple-use is practiced in a big way by the nation's lumber, pulp, paper, plywood and other-wood processing companies. According to a survey completed by the American Forest Products Industries of some 518 companies owning 86.2% of forest industry commercial timberland, more than 50 million acres are open for public recreation.

Covering some 58,140,936 acres, it reveals that 92.3% of this land is open to hunting in season. Fishermen can enjoy their sport on nearly 40,000 miles of streams. Companies reported that more than 6 million visitors enjoyed recreational facilities on their lands.

Says AFPI Chief Forester, "The survey shows that these companies are not only growing wood required for useful products, but they are also making a major contribution to the recreational needs of our growing population. Use of forest land for recreational purposes is an important part of the multiple-use management program industries are following."

**To improve fishing and wildlife** conditions on privately owned lands, International Paper Co. has agreed with the New York State Conservation Dept. to include some 29,400 acres of its tree farm at Speculator, N.Y., under the state's new fish and wildlife management act. While company lands have always been open to sportsmen, International Paper is cooperating to avail itself of state-provided services in connection with game management, hunter dispersal and public education.

Last year, just before the fall hunting season, International Paper distributed copies of a sportsman's map of the Speculator tree farm which invites sportsmen to hunt and fish on this land. Included on the map is a brief description of the forestry work being carried out by IP, plus some courtesy and "rules of the road" suggestions.

Brown Co. has opened more than 250,000 acres of timberland in Maine, for multiple use, making a total of more than 635,000 acres of its lands so available. ■

# Wood buying program set up for new mill

Nova Scotia Pulp Ltd. is anticipating the day, late this year, when its new 350 tpd bleached sulfite pulp mill gets into production. The $40 million mill now under construction at Point Tupper on the Cape Breton side of the Strait of Canso in Nova Scotia, will need about 250,00 cords a year to supply its needs.

Company plans are to buy some 5,000 cords immediately to test its system and give woodlands owners some experience. Price is expected to range from $14 to $20/cord, delivered to the mill.

About 150,000 cords will be from lands leased from the Nova Scotia government, including 400,000 acres acquired by the province from Oxford Paper Co., in a $3,800,000 sale last year.

**Lease includes all crown lands** in counties of Pictou, Guysborough, Antigonish, Victoria, Cape Breton and Richmond. Balance of needs will be supplied by private woodlot owners controlling about 2,300,000 acres.

Nova Scotia Pulp is 80% owned by Stora Kopparberg, Swedish industrial complex, and 20% by Scott Paper Co. It will have a sustained yield program on its forests lands and will artificially restock land not regenerating satisfactorily after 10 years of cutting. Private owners, too, will be helped. ■

# Forestry news briefs

**Forest receipts hit record high** as more than $148 million was received from the sale and use of lands administered by the Forest Service during fiscal year 1960, the U.S. Department of Agriculture reports.

Timber sales, grazing permits, and other fees on national forests, national grasslands, and land utilization projects totaled a record $148,212,472, as compared to $124,066,792 in 1959. $146,348,136 came from national forest lands covering 181 million acres. The remaining $1,864,336 was collected from 4.6 million marginal and submarginal acres purchased in the 1930's and since restocked and rehabilitated.

More than 94.6% of the receipts, $140,125,842, were from timber cut in 1960. In 1959 timber and forest products brought in $116,154,943.

Under multiple use management of its lands USDA's Forest Service also collected $4,507,956 from grazing fees; $1,118,769 from recreation uses; $136,412 from power uses; $1,919,257 from mineral leases and permits; $51,181 from crops, hay and sale of seed; and $353,051 from other special land uses.

As a result of the greater Forest Service income, counties where national forest and other lands are located will receive larger payments, since 25% of receipts is paid to States for roads and schools within such counties. The remainder goes into the Federal Treasury.

**Hungarian refugees graduate in B.C.** from unique educational project that reaches successful conclusion in April, when Sopron Forestry School at Powell River, B.C., will stage its final graduation exercise.

Sopron comprises students and instructors who fled Hungary following the 1956 revolution. They came to Powell River at the invitation of Powell River Co. Ltd. (now part of MacMillan, Bloedel & Powell River Ltd.). The school operated under company sponsorship.

There were 196 students in the original group. Some of them found jobs outside the forest industry, and a handful returned to Hungary. But 116 will have graduated by the time the school closes its doors. ■

**5 OF THE 19 STEEL STRUCTURES CB&I FURNISHED FOR WARREN'S MUSKEGON, MICHIGAN PULP MILL**

ABOVE (bottom to top of photograph)

1. 122-foot waste clarifier
2. 137-foot cone roof water reservoir
3. 190-foot water clarifier

BELOW (left to right in photograph)

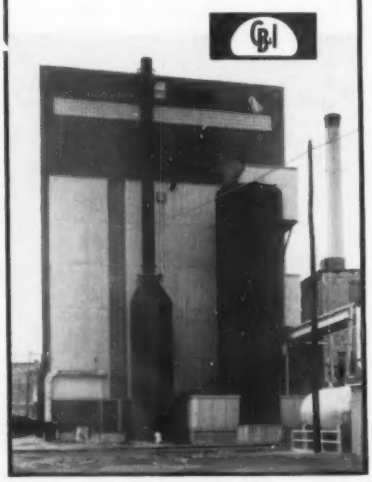
4. 56-foot chlorination tower
5. 40-foot foam tower

# Questions of Bigness and Quantity Never Frighten Our Pulp and Paper Experts

Steel clarifiers 190 feet in diameter, steel water reservoirs 137 feet across, towers 57 feet tall—are typical of CB&I storage structures and process equipment at S. D. Warren Company's Muskegon, Michigan pulp mill.

If it is built of steel or alloys, so successfully fabricated by CB&I to combat corrosion, there are few processing and storage structures CB&I doesn't furnish. CB&I design engineers, fabricating craftsmen and erection experts have years of experience in building steel plate work for the industry.

That's why when your quests are for bigger and more efficient storage and processing units to meet your requirements, you should call on CB&I.



CB&I

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CB-619

# Strathmore names Johnston as president

WEST SPRINGFIELD, MASS.—Henry D. Johnston, vice pres., and a director of Strathmore Paper Co., has been elected president. He succeeds F. Nelson Bridgham, president and chairman. Mr. Bridgham continues as chairman.

Mr. Johnston joined Strathmore in 1927 after graduating from M.I.T. with an engineering administration degree. Mr. Bridgham has been with Strathmore since 1910, the year he graduated from Boston U. He is chairman of the board of Premoid Corp., a Strathmore subsidiary, a director and asst. treasurer of Rising Paper Co., and a past president of the Writing Paper Mfrs. Assn.

Also promoted is Bemis P. Wood from gen. supt. to vice pres. i/c production, succeeding Laurence W. Shattuck, who has retired. Ray F. Arnold retires as mgr., product development. Harold A. Bolles, who retired as supt. of the No. 2 mill in Woronoco earlier, retires as a director.

Elected to the board of directors are Robert B. Clark Jr., mgr. printing paper sales and Peter G. Volanakis, mgr., technical paper sales.

Henry D. Johnston

F. Nelson Bridgham

# Nekoosa promotes six in production

Bernhardt

Hassett

Buchanan

Zieman

Lamb

Newman

PORT EDWARDS, WIS.—A major realignment of production responsibilities has been announced for Nekoosa-Edwards Paper Co. by Charles H. Reese, mfg. vice president.

Arthur A. Bernhardt advances to asst. production mgr., Wisconsin mills, reporting to Neil Christian, production mgr. He will direct activities of the managers of the company's two Wisconsin mills and the manager of production scheduling dept.

Succeeding him as manager of the Nekoosa mill is Patrick J. Hassett. John S. Buchanan becomes acting supt. of the kraft mill at Nekoosa, and Philip Zieman is promoted to general foreman of the kraft mill.

Alfred Lamb moves to tour supt. in the Nekoosa kraft mill and Frank H. Newman has been appointed to be assistant sulfite mill supt. at the Port Edwards mill.

The promotions were made, explains Mr. Reese, in keeping with Nekoosa-Edwards long-standing policy of promotion from within. They also point up, he states, the management's recognition of the need for young, vigorous leadership in the paper industry today.

# Oxford assigns two new mill managers

Hartford

Stupp

NEW YORK—Philip L. Hovey, vice president, manufacturing, Oxford Paper Co. announces these management changes.

Willis G. Hartford, production mgr. at the Lawrence division, becomes mill mgr., February 1, replacing Norman I. Bearse, who has asked to be re-assigned to other responsibilities.

George E. Prentiss, general supt. of papermaking at Rumford, is being promoted to production mgr. at Lawrence. Chester N. Stupp, direct sales mgr., transfers to the West Carrollton mill as mill mgr. to succeed Charles H. Claypool, who has resigned to accept a post with Nova Scotia Pulp, Ltd.

# The Signode Model M20-RB

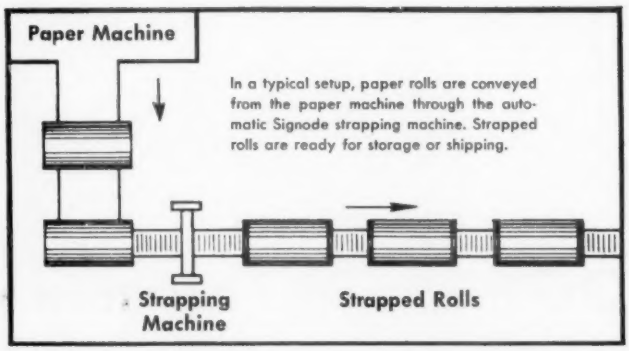
## Fast, dependable, automatic roll end binding

This automatic machine reduces costs and improves product quality. It operates dependably, binds 70 or more rolls per hour, and applies steel strapping accurately within less than an inch of each roll end, with uniform tension.

The roll positioning and strapping operation is completely automatic. The machine is fed by a power conveyor, and handles rolls 24 inches to 72 inches in diameter, in any width the conveyor will accommodate. Strap tensioning, sealing and severing are performed by the Signode M20 head, famous for its rugged reliability and advanced design.

Fourteen of the world's leading paper mills are already using these automatic machines.

Write for additional information, or ask the Signode man near you.


Paper Machine
In a typical setup, paper rolls are conveyed from the paper machine through the automatic Signode strapping machine. Strapped rolls are ready for storage or shipping.
Strapping Machine
Strapped Rolls

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*First in steel strapping*

# Langston Leader

LEADERSHIP BY DESIGN

JAN. 1961 Published for information of paper and board mills by Samuel M. Langston Company, Camden 4, N.J. VOL. 3, NO. 1

## A NEW TRADEMARK

Many companies these days have been seeking to establish new trademarks. So, too, has Langston. The search basically is for a symbol which has the power to instantly identify a company in the minds of customers and public.

We have had a couple of different symbols which have been used over the years, one which we have generally connected with corrugating units and another with slitters and winders. But we have felt we would get better identification by settling on one trademark that would stand for Langston and be all encompassing.

In looking into the subject we found that it has been practice until recent years to have a trademark which realistically conveyed an image of the company's product or service.

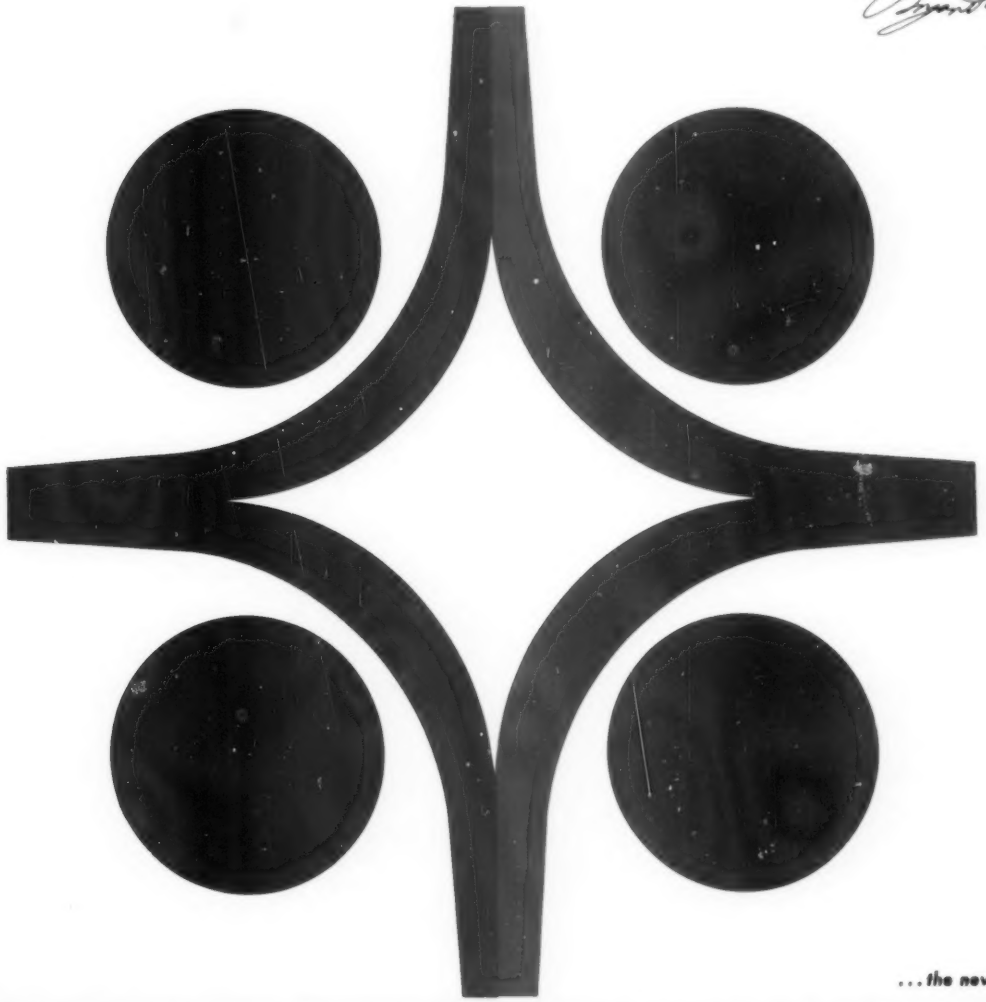
Realism, however, was found to have one weakness. It does not take into account changes occurring in the course of time. Too often, developments such as new products or new divisions of manufacturing or new services make the realistic trademark obsolete, outdate a too literal picture.

To give a trademark the element of timelessness, the trend is to create an abstraction, which is symbolic of a company's qualities or products or services. Through repetition it acts like a shorthand symbol to give the viewer an image associated with that specific company.

The best abstractions seemed to us to capture the essence of a company's character in one simple, concentrated and aesthetic form. To create such a new trademark, which would impart what we feel is the essence of our company, has held no inconsiderable amount of our attention over the last few months. Now we are introducing it to you in this issue of the Leader. You will soon see it on all our communications, advertising and machines.

We feel that the new symbol is distinctive. To us it conveys an image of our company and in an abstract way, a conception of our products. We hope that you will like it and that it will come to mean Langston to you—as well as all that we have tried to make Langston mean through sixty years of manufacturing: highest quality, dependability, leadership, integrity and service.

PRESIDENT



*...the new Langston mark*

# NEW TRADEMARK READY TO TAKE BOW

## Logotype and Company's New Color Also Unveiled in Langston Symbol

A new Langston trademark takes its bow this month.

This issue of the Langston Leader tells the story of the new symbol and the Langston logotype now appearing on everything from machine frames to serial number plates to invoices and stationery.

The new trademark symbolizes the spirit of Langston slitters and winders. Its imagery brings to mind the basic activity of these machines—rolls and webs—and imparts a feeling of motion and energy.

A modern abstract design with a realistic overtone, the symbol embodies four curves moving at right angles in the shape of a cross and suggesting webs of paper, since each curve embraces a circular roll.

• • •

**As part of the design** of the new trademark, Langston has also selected a new company color—deep turquoise—which when reproduced, as it is in the illustration on the preceding page, as part of the new trademark, half of the symbol is the deep turquoise and the other half black.

Also introduced is a new typographical version of the Langston name—a logotype in specially designed modern italics—for use with the new trademark, or separately as specific applications may dictate. The italics and symbol will also be used by Greenwood Engineering Company, Langston's subsidiary, and serve to visually link the two companies as part of one family.

By incorporating in a single motif a basic idea that conveys the work of Langston machines, the new trademark replaces two familiar symbols associated with Langston: one, the T-square and triangle with the Leadership By Design signature; the other the scissors and cutterhead with the Shear Cut-Clean Cut slogan.

• • •

**"The new trademark,"** says President Bryant W. Langston, "gives us one modern symbol to represent Langston wherever our machines and work take us.

"We feel that our new trademark captures the essential element of Langston machines which have served the paper industry for 60 years.

"It is our hope and resolve that the years ahead under the new trademark will continue the Langston reputation established under the old symbols and that our goal every day shall be to uphold Langston's name for highest quality machines and integrity of service."

• • •

**Created and designed** by Albert Storz, Philadelphia industrial and packaging designer, under direction of Langston's advertising and public relations agency, Gray & Rogers, the new trademark and logotype made their appearance January 1, on all Langston machines, packaging, sales material, bulletins, advertising and business forms.

Storz, whose other clients include Campbell Soup Company, Scott Paper Company, E. I. du Pont de Nemours & Company, Joseph E. Seagram & Sons, Inc., and Revlon, Inc., made a study of Langston and its machines before undertaking the new design.

Says Storz: "Langston machines impart a sense of power. They are at once massive yet mass in motion. At the same time they are precision instruments, in which a thousandth of an inch can make a vital difference in the slitting and rewinding of a roll of paper.

*... three dimensional appearance*

"All these factors entered our thinking. We sought to unify the essential elements in a symbol that would be strong, would bespeak power and drive, would combine elegance but nothing of the dandy, be bold rather than refined, rugged and durable as against delicate or light.

"Of course, one can see in an abstraction whatever the individual fancy feels. But we believe that anyone in paper making or anyone having any knowledge of Langston will find it easy to recall or recognize the new Langston symbol.

• • •

**"The artist can** only endow the trademark with those universal elements he feels will simplify the imagery, give the mind direction finders, steer thinking toward the Langston function. If he has done his job well, the trademark will be easily memorable—and endure as long as the company continues in that business. We trust and hope the Langston mark will have a long, long life," Storz concluded.

As of the first of the year Langston and Greenwood were scheduled to appear, wherever the names are used, in a new trademark dress, designed to be memorable, to stand for Langston and its subsidiary, and a reputation for machines of highest quality for years to come.

Langston

*... new logotype with new trademark*

# Brown Co. elects five vice presidents

BERLIN, N.H.—Following consolidation of Brown Co. operations into divisions, Leonard A. Pearce, president, has announced these changes.

Hugh D. Jordan, treasurer, becomes vice president and treasurer. H. A. Raymond, Jr., formerly president of Resi-Chem Corp., a subsidiary of Brown, is vice president and general mgr. of the Resi-Chem Div. He continues to direct production and sales of synthetic resin and adhesive products.

Allie E. Salls, president of Brown subsidiary corporations in the manufacture of hardwood veneer and plywood, is elected vice president and general mgr. of the plywood products division. This division is at North Stratford, N.H.

Conrad T. Waldie, Jr., i/c Brown Co's. towel div., is elected vice pres. and gen. mgr. of towel, tissue and Onco divisions.

J. J. McDonald, general manager, sulfite pulp and floc division, was made vice president and general manager of this division and will continue to direct production and sales of this line.

# Dr. Nadelman leaves Western Michigan U.

**Dr. Alfred H. Nadelman**

KALAMAZOO, MICH.—Dr. Alfred H. Nadelman, who led in the creation and development of the progressive and fast-growing paper school in the United States at Western Michigan University, has retired as head of WMU's paper technology department.

His future plans are undecided but he is expected to remain in the pulp and paper industry field, in which he has been prominent as scientist and teacher for many years. He plans to attend Paper Week in New York.

Dr. Nadelman came to Kalamazoo in 1948 from International Paper Co., Niagara Falls, N.Y., where he had been technical superintendent. He started the pulp and paper curriculum, which became a full-fledged university department in 1955 and now has over 100 students. He led in planning construction of buildings and acquisition of equipment for the school. He worked closely with paper companies and supply and equipment companies, especially in Michigan.

He plans to live in Kalamazoo and will carry on his 3-year term as TAPPI executive committeeman. Dr. Nadelman was born in Stettin, Germany, and holds a ph.d. degree, magnum cum laude, from University of Berlin. He was a junior partner in his father's chemical firm in Stettin when he decided to move to U.S.A. in 1938. He was chief chemist for Milprint Inc., and chief research chemist for Glassine Paper Co., before joining International. He has been a consultant to paper mills and suppliers in U.S.A., Europe and Japan.

# STRICTLY PERSONAL . . .

## Midwest

### VISA Group in Wisconsin Elects Healy President

Matthew F. Healy, Jr., who represents American Cyanamid Co. in northern Wisconsin, has been elected president for 1961 for the Valley Industrial Salesmen's Assn., which is the very active group of equipment and supply representatives in the Appleton-Neenah area of Wisconsin. This is perhaps the largest concentration of these representatives anywhere in the U.S.A., except New York City.

Russell C. Lakey of Nopco, has been elected vice president. Claire Turner of Appleton Woolen Mills, is the new treasurer. Herbert Luecke, McKesson & Robbins Inc., was chosen secretary.

**Fred A. Haselow,** who recently joined the Mosinee Paper Mills Co. staff, is named chief engineer for the Mosinee, Wis. firm. In another MPM announcement **Alan R. Bowers,** at one time with the Institute of Paper Chemistry, becomes an analytical chemist in the product development and technical service group of the research dept.

**Amasa Howland** has joined the sales engineering staff of The Sandy Hill Iron and Brass Works in Michigan, Wisconsin and Minnesota.

**Vernon C. Iverson** is now asst. supt. at Nekoosa - Edwards, Port Edwards, Wis. He has been tech. asst. to paper mill supt since Jan. 1960; with Nepco since 1951.

Hoerner Boxes Inc., Keokuk, Iowa, announces new executive appointments: **J. C. Perry,** gen. mgr. of the Minneapolis, Minn. plant, becomes a vice pres. of the firm and a member of the board of directors; **Henry O. Hoium,** controller in the gen. office accounting dept., is named asst. treas., and **R. N. Hoerner Jr.,** marketing planning mgr. at Keokuk, is appointed asst. sec. of the firm. . . . **David M. Jacks** and **Thomas G. Cocks** become vice presidents of Nalco Chemical Co., Chicago. They will serve as executive liaison officers based in Chicago and will coordinate administration of several subsidiaries and divisions. Mr. Jacks was formerly vice pres. and gen. mgr. of Visco Products Co., Nalco's Texas subsidiary; while Mr. Cocks was southeastern district mgr. for the Industrial div., based in Jacksonville, Fla. . . .

**Earl E. Edwards,** purchasing agent for Wausau Paper Mills Co. at Brokaw, Wis., died recently in Wausau. He had been with the firm more than 33 years, more than 20 of those as purchasing agent. . . . **James L. Morrissey** is named to the newly created post . . . **turn to p. 62**

*Idea submitted by Robert F. Chase, Franconia Paper Corp., Lincoln, N. H.

Photo by: Ewing Galloway, N. Y

HAM FELTZ says:

# "Reminds me of HAMILTON Felts... they stand up well under all conditions!"

" 'The Old Man of the Mountains', or 'Great Stone Face', has well endured the rigors of New Hampshire's weather. Likewise, Hamilton Felts always stand up under the continual running streams of stock, and the constant pressures of making paper and box board.

"And long, trouble-free service and consistent high quality performance you get from Hamilton Felts means savings and mounting profits."

If *you*, too, want long, trouble-free service, why not start using us this month — as one source of your felt supply?

Ask the Hamilton Felts service salesman in your territory about our 300 proven styles. If one of our "standard 300" won't solve *your* needs, we will be happy to design a Hamilton Felt that will.

## *WIN... *A NEW Shakespeare Spincast Fishing Outfit!*

**"What famous place reminds you of Hamilton Felts? Tell us why in a few words; sign your name and address and name of company. Each month, the idea from a U.S. papermaker that we use wins a new 1961 model Shakespeare Spincast Rod and Reel—FREE! When identical winning ideas are submitted by 2 or more papermakers, the one with the earliest postmark will be considered the winner. *Every U.S. papermaker entrant* receives a famous Rex Spoon fishing lure—FREE. Send me your suggestion—today. Ham Feltz, Dept. P.P. 612 First National Bank Bldg., Cincinnati 2, Ohio."**

YOU CAN'T BEAT

**Hamilton**

**FELTS**

**SHULER & BENNINGHOFEN, HAMILTON, OHIO**

# MEETINGS

### . . . January

**Plant Maintenance & Engineering Show,** International Amphitheatre, Chicago —Jan. 23-26

**Miami Valley Division PIMA,** Manchester Hotel, Middletown, Ohio—Jan. 24

**Technical Section CPPA** (Annual Meeting), Queen Elizabeth Hotel, Montreal —Jan. 24-27

### . . . February

**Chicago TAPPI** (Solid Bleached Sulfite as Packaging Medium), Chicago Bar Assn., 29 S. LaSalle St., Chicago—Feb. 7

**Southern Pulpwood Conservation Assn.** (Annual Meeting), Roosevelt Hotel, New Orleans—Feb. 7-8

**Michigan PIMA** (personnel training), Harris Hotel, Kalamazoo—Feb. 9

**Paper Week: TAPPI,** Commodore Hotel; **APPA,** Waldorf Hotel; **APA,** Roosevelt Hotel; New York—Feb. 19-23

**American Institute of Chemical Engineers** (44th National Meeting), Hotel Roosevelt, New Orleans—Feb. 26-Mar. 1.

### . . . March

**Kalamazoo Valley Section of TAPPI and PIMA** (graphic arts), Innmans Restaurant, Kalamazoo—Mar. 16

**Folding Paper Box Assn. of America** (annual meeting), Drake Hotel, Chicago—Mar. 20-22

### . . . April

**Kalamazoo Valley Section of TAPPI** Innmans Restaurant, Kalamazoo—Apr. 6

**New York-Canadian Div. PIMA** (spring meeting), Eastman Kodak Co., Rochester, N. Y.—Apr. 21

**Michigan PIMA** (Ladies night), Harris Hotel, Kalamazoo—Apr. 22

### . . . May

**Kalamazoo Valley Section of TAPPI** Recognition night), Gull Harbor Inn, Kalamazoo—May 25

### . . . June

**Kalamazoo Valley Section of TAPPI** (fun night), Gull Lake Club, Kalamazoo—June 20

### . . . September

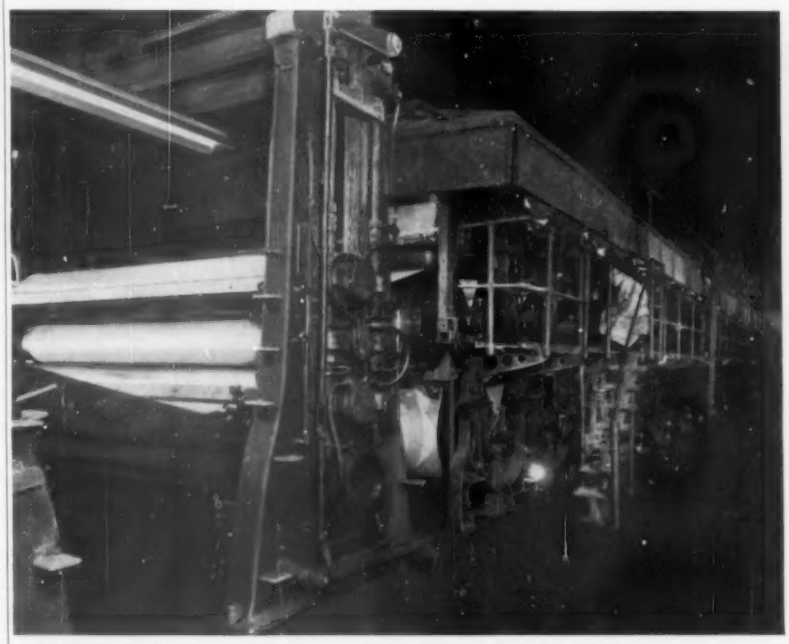
**Northwestern Div., PIMA** (fall meeting), Faust Hotel, Rockford, Ill.—Sept. 20-22

### . . . October

**Packaging Institute** (23rd Annual National Packaging Forum), Biltmore Hotel, New York—Oct. 18-22


## HOW HAGAFILM STOPPED RETURN LINE CORROSION, REDUCED DAILY FUEL COSTS

### at Whippany Paper Board Company



*Quick case history—reading time 58 seconds*

**THE PLANT:** One of the nation's largest producers of paper board and cardboard, Whippany Paper Board Company's Clifton, New Jersey plant uses secondary steam to progressively reduce moisture content in their products during manufacture. Steam is used to heat the more than 20 rolls in each paper machine to effect this drying.

**THE PROBLEM:** High corrosive action of the condensed steam necessitated replacement of 18-20 pipe nipples *every three weeks*, raised maintenance costs. Corrosion deposits in pipes impeded heat transfer effectiveness, increased fuel costs. Steam traps frequently clogged.

**THE SOLUTION:** Since introduction of Hagafilm into boiler feed-water system three years ago, no pipe nipples have needed to be replaced due to corrosion. Hagafilm cleaned out corrosion deposits, raising surface temperature of the dryer rolls about 20° F. Steam trap clogging is no longer a problem.

**TEST RESULTS:** Hall Laboratories engineers, testing the system, had to wait five months before testing strips showed enough corrosion to even be measured. After five months, the strip located at the turbo-generator outlet showed the extremely low corrosion rate of 0.4 mg/dm²/day (0.07 MPY). The strip at the steam trap discharge had a similar low corrosion rate of 1.4 mg/dm²/day (0.26 MPY).

**FOR FULL INFORMATION** on how Hagafilm can help in your plant operation by putting a thin protective film on metal surfaces throughout the condensate system, contact Hagan Chemicals & Controls, Inc.

**HAGAN**

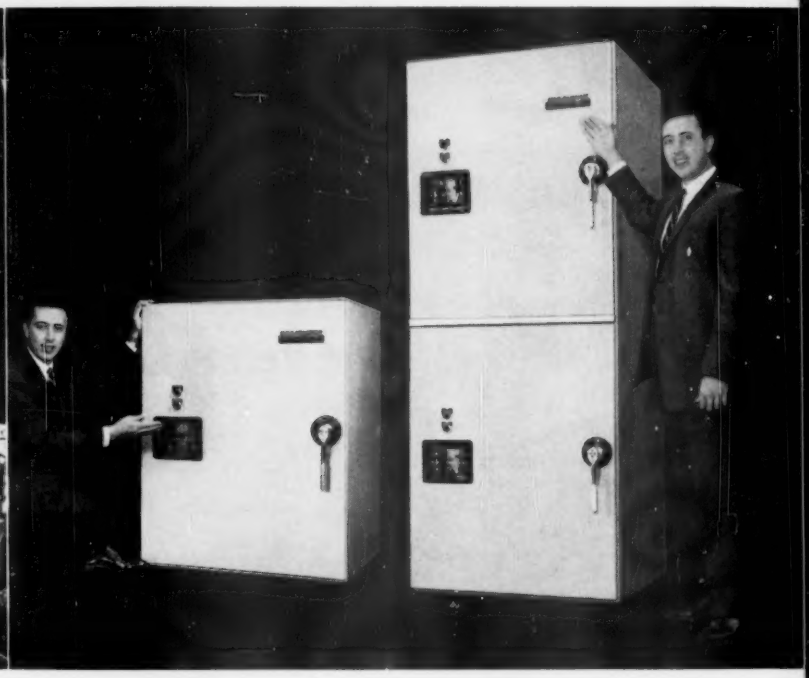
**CHEMICALS & CONTROLS, INC.**

HAGAN BUILDING, PITTSBURGH 30, PA.

**HAGAN** DIVISIONS: CALGON CO.—HALL LABORATORIES—BRUNER CORP.

# ideas and news:

**Superior moisture resistance proved:** Used for pump service in a low-lying work room of a Connecticut paper company, this Allis-Chalmers motor has repeatedly been under 5 to 6 feet of water. Because it is a Super-Seal motor with tough Poxeal insulation, impervious to moisture, it goes back into service when the waters recede with no time-consuming "bake-out" period.

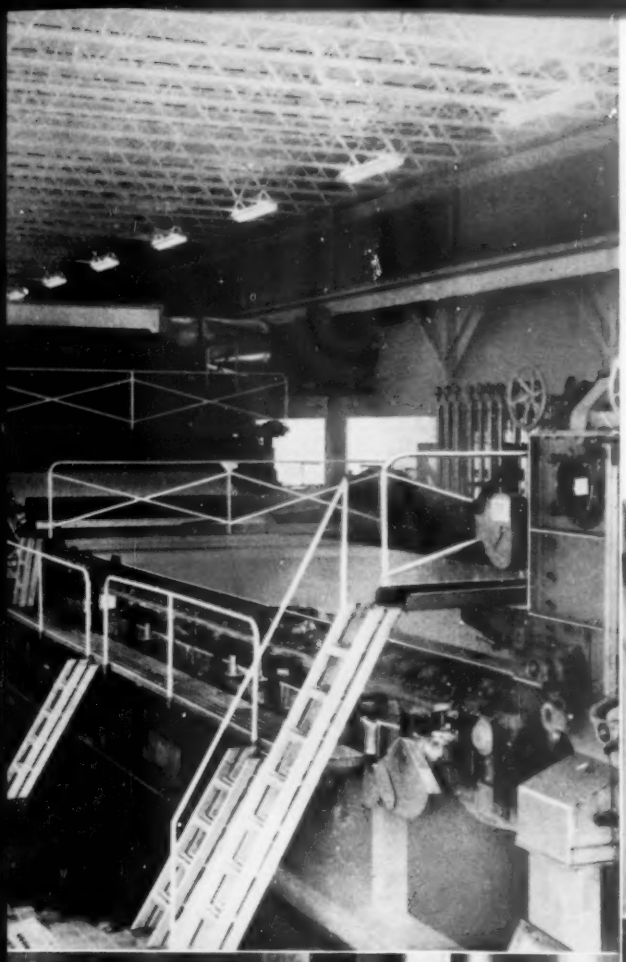


**So low, two fit where one used to go:** This new SpaceMaker control center is the first completely new 2- to 5-kv motor controller development in more than a decade. New compact two-high design can cut floor space requirements in half. Complete drawout construction makes it the safest, most easily accessible controller on the market. New flame-retardent, track-resistant Super Pyro-Shield insulation adds to reliability, reduces size and weight. And, the all-new roll-out contactor has been designed specifically to cut maintenance time and costs.

## Which of these productive ideas could be working for you?

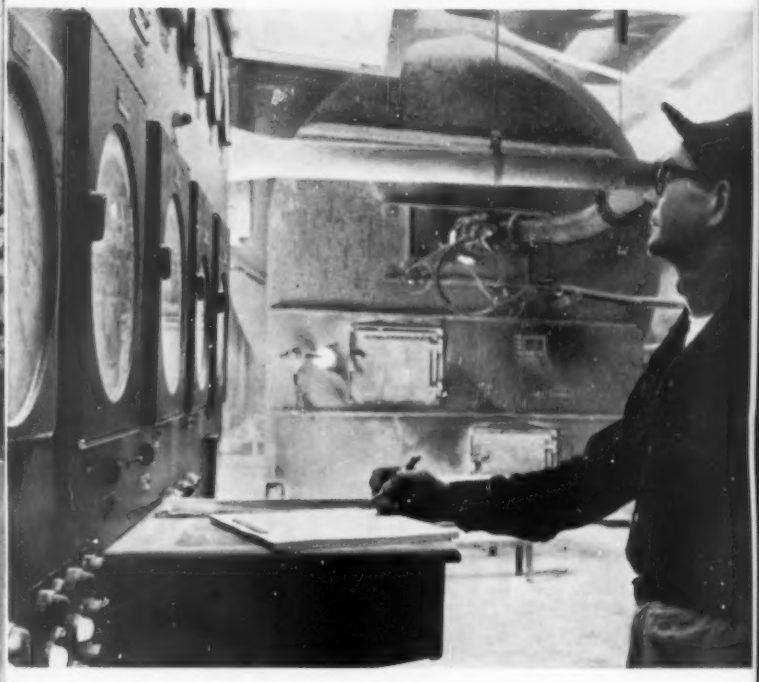
A control unit that saves space. A motor that laughs off floods. These examples demonstrate the extra value that is standard with A-C . . . the greater efficiency and the added productivity which are yours when you buy A-C products, systems and services. Call your Allis-Chalmers representative for details on A-C "worth-more" features. Or write Allis-Chalmers, Industrial Equipment Division, 903 S. 70th Street, Milwaukee, Wisconsin.

*Super-Seal, Poxeal, SpaceMaker and Pyro-Shield* are Allis-Chalmers trademarks. A-1397



**New "king size" machine is extremely versatile:** Typical of the specialized equipment built by our Valley Iron Works subsidiary is this 160-inch glassine paper machine . . . one of the largest of its kind in the world. Running at speeds from 300 to 1200 feet per minute, it will produce up to 109 tons per day.

**How to cut lime costs by 50%:** An Allis-Chalmers lime recovery kiln produces lime from waste lime sludge at half the cost of new lime. Plants in the sulphate pulp industry can recover most of the lime used in liquor processing as well as water softening. Result: Practically no new lime to purchase — No waste lime sludge to dispose of.



**One-man maintenance for new vertical pump.** This redesigned A-C pump provides easy accessibility to internal parts. One mechanic can remove entire rotating element without need of an electrician to disconnect the motors or a pipe fitter to break piping. In addition, vertical design takes 25% less floor space than horizontal units.

**A-C INDUSTRIAL EQUIPMENT DIVISION:** motors, generators, controls, rectifiers, pumps, compressors, crushers, mills, screens, kilns, coolers, industrial systems.

**OTHER A-C PRODUCTS:** thermal, hydro and atomic electrical generating equipment; switchgear, transformers, unit substations; tractors, earth-moving equipment, engines, lift trucks.

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PULP & PAPER

**Editor Albert W. Wilson, who has been in Europe during the past year, setting up operations for PULP & PAPER INTERNATIONAL and covering the European scene for PULP & PAPER, has just returned from an extensive tour of Poland and from covering important meetings there. Here is his eye-witness report . . .**

# Poland Aims at Million Tons

## of paper production if five year plan is a success—would mean increase of 50% capacity of paper and board mills

WARSAW—There is an oft-heard expression here: "A Pole is like a radish—red outside and white inside . . ."

In traveling through this land of many partitions and invasions, I often saw its red and white flag. I did not see the red flag of communism as often, and when I did, the red and white banner of Poland usually was there too.

It would be a mistake, however, to believe that either the above quoted expression or the frequency of the flags indicated any important, or at least effective, opposition to Communism. Rather, they indicate the strong and warm national spirit and devotion of a people, developed through much more adversity and subjugation than most other nations ever endured.

This must be a basic consideration in evaluating the tremendous strides which this obviously poor nation is making to create a major pulp and paper industry. The production of its paper and board mills reached about 625,000 tons in 1960, almost three times what it was at the time of the 1939 blitzkrieg.

"Our industry was totally destroyed in that conflict," Jan Grudinski, dapper, ebullient, youthful vice-minister of wood-using industries told this writer. Consequently there is a deep sense of urgency about Poland's drive to increase production by 50%. A five-year-plan is being pushed at high pitch and should bring Poland's production to close to a million tons a year. Nonetheless, eleven major nations make that much—and a great deal more—paper today.

The Poles I met, even in high ranking pulp and paper management, engineering and research positions, are not "walking on their uppers." They are, however, far from being as well off as their opposite numbers in Western countries. In my travels in Soviet Russia over a year ago, I found paper industry executives who were much more affluent, enjoyed more marginal luxuries than the Poles, though neither have the possessions of an American or Western European paper mill manager. Many of the Poles I met have no present hope of owning an automobile. In Russia, some had their names in for a delivery in a year or so. The Poles lived, in some cases at least, in old, sparsely furnished apartments, although I saw many new ones going up in Warsaw and Lodz.

**Paper consumption in 1959** was about 35 pounds per inhabitant, placing Poland in 30th place among the nations of the world. Its consumption was only slightly ahead of Russia's 32.4 pounds. Thus,

both Poland and Russia are an index, though not the perfect one, to living standards and literacy—on about a level with Mexico, Rumania, Hungary, Taiwan and Brazil.

The per capita consumption in Poland, Russia and these countries is far behind many Western nations. But the Polish people, poor as they are, should be able to consume the increased production. Intellectually, they are more ready for a bigger paper market than many other nations in similar levels. As of now, the average Pole uses only one-fourth as much paper as the average Dutchman, one-fifth as much as a Swiss, one-sixth as much as a Britisher, and one-twelfth as much as an American.

This explains why, in one brand new modern mill I visited, two Langston (American) printer-slotters were *not* being used for printing kraft corrugated containers. Poland has not reached this competitive stage in selling. Brand names are not required, apparently, on the fiber boxes. Likewise, I visited a six-machine bag plant, all Winmoller & Holscher machines from Germany, with a capacity of 100 million bags a year. But the machines run at a rate of only 50 million now. S&S gluers for the boxes and Reliance Electric & Engineering Co. variable speed drive equipment and controls from Cleveland were in this plant.

**In the new Ostroleka mill**
no less than three new Black-Clawson Fourdrinier machines were started last year—one in March, one in July and one in October. Each one is 160 inches wide. The Poles learned interchangeable parts may cut costs substantially. One is for bag paper and two for wrapping, the last one a thin wrap made with a Bentley & Jackson Yankee. When a new kraft liner No. 4 machine is added here in a year or so, this mill will be capable of producing 100,000 tons a year.

This mill is thoroughly modern. There was much familiar equipment—Millspaugh press parts for all machines, Hydrapulpers, Hydrafiners, Miami jordans, Selectifiers, Dirtecs, Classifiners, a Duopulper, Bauer cleaners, Nash pumps, Foxboro and Bristol instruments and controls, Carrier-Ross Engineering aluminum hoods, Dorr-Oliver saveall, Jagenberg cutter, two Masson-Scott supercutters, and Hydraulic Machinery drives. The stock preparation systems for all machines, engineered by Black-Clawson, is as modern as in many of the newest kraft mills. A largely glass-constructed entrance to this mill for workers is impressive. The buildings are well built.

I traveled to this new "showplace" of Poland's paper industry with a bus-load of technical men and two women (from Germany and Rumania). They came from Western and Communist countries, and many represented companies which had supplied equipment. Top technical executive for all the pulp and paper industry of Poland, Jerzy Olejniczak, was awarded a gold medal for his services in the building of one of the mills visited. He was an alert, energetic young man.

In a Communist nation such as Poland, there is a complicated structure of management in any industry. Volatile little Mr. Grudzinski, the vice minister I previously mentioned, is the real leader. At a midday feast at Ostroleka—which, incidentally, lies 90 miles west of the Russian border, and was a 70 mile bus ride north of Warsaw, over slightly rolling farmlands and some sparse forests—he showed his ease and ability as a speaker and a veteran of political experience. In my interview with him, he expressed a hope that this report on Poland would be a fair one. He also said he hoped soon to visit the United States.

His "boss" is Jan Dab-Kociot, minister of forests and wood-working industries who spends most of his time on forestry matters, so the actual head man of the forest industries is Mr. Grudzinski.

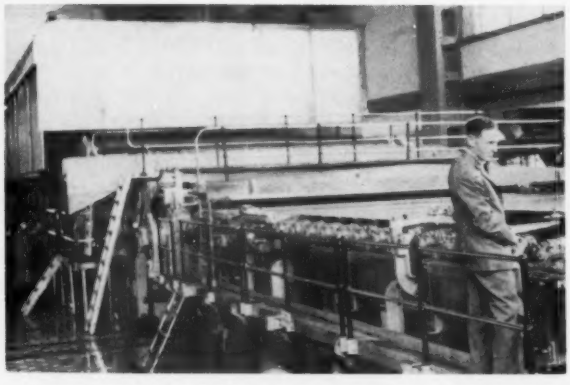
**A top planning committee**
for the woodworking industries works under him. Then under this are central boards for each industry—paper, plywood, furniture making, etc. The managing director of the paper industry central board is Henryk Pawlowski, a gray haired, husky Pole. Mr. Pawlowski's story is a Communist "Horatio Alger" one. He rose from the ranks of workers, proving himself an outstanding industrial manager. Under his board are "enterprises" and "factories." An "enterprise" may be a combination of several factories. But when it is as big as Ostroleka it is both an "enterprise" and a "factory." Quotas for plant production, programs for expansion—all of these plans go through a rather complicated system of consideration, up and back down this ladder of authority. But, importantly, it all must be approved by Mr. Grudzinski.

The manager of the Ostroleka mill has the right to protest against what he thinks may be a high quota for the mill. The top officials, the central board, then try to convince him it isn't. His salary depends on the production of his mill, and incentive payment is common practice in Poland, just as I found it was in Russia. (The incentive system in these countries would certainly be protested violently by American labor leaders if they were confronted with it.)

I have used the Ostroleka manager here only as an example, as I certainly do not know whether he ever protested a quota.

**One of east Poland's largest mills, the Ostroleka mill, features a great deal of**

CALLED "SHOWPLACE" OF POLISH INDUSTRY, Ostroleka paper mill, north of Warsaw, has attractive entrance.



CARRIER ROSS HOODS with Ross Grewin ventilating system are used on two of Ostroleka's paper machines.

Ostroleka now makes one fourth of all the paper made in Poland, even with its three machines of a year's operation or less. But there is to be even a bigger mill than Ostroleka in Poland. This will be at Swicie, on the Vistula River, near the German border. Eventually it will become the biggest mill in the country. It will make 25% of all Poland's production. When that happens, Ostroleka, with its four machines, will have to take second place with 20%.

There are other big plans for Poland. At Kostryn, a kraft mill near the German border, an expansion in pulp or cellulose is projected. It will also make paper.

Skolwin, near Stettin, the seaport also on the German frontier, will expand in paper and also start production of cellulose.

The Poles are looking earnestly into the techniques for making straw and reed pulps. You may be sure that this northern nation will use these raw materials, as wood is not plentiful. The Poles said many forests were laid waste or overcut in the war. Poland will require two million cubic meters of pulpwood annually, and it will require the use of sawmill waste and waste paper.

**Selling paper in Poland**
is a story that presented something an American or Western nation sales manager could hardly comprehend. Here there are cross checks and balances of authority and, frankly, as I look at my notes on this, I just give up trying to explain it! Selling of paper does not seem to be a major problem in Poland.

In my tour of Poland, besides a couple of other Americans, a few Englishmen, Swedes, Germans from both East and West and others, there were two Russians. One I had met a year previously in Russia, Konstantin Maslennikov, who is chief engineer of the Communar mill in a little town about 40 miles south of Leningrad where three machines are making good quality condenser and electrical-use papers.

The other Russian I had not met before. A. N. Simakova —that is the simple way she signed her name in my note book—represented Goskomitet Naucno-Technicesky Sovieta Ministrow R.S.F.S.R., in Moscow.

If you are wondering why I have described these two Russian visitors, it is because their presence at the international tour and at all the Polish meetings was important. Mr. Maslennikov gave a paper in which he described the production at the Communar mill while his companion took no part in discussions but was very attentive and interested in all events.

## Polish meeting international training course for its technicians

The success or failure of Poland's paper industry grand plan will depend, as in any country, on the ability of its technicians. For this reason, the first International Pulp & Paper Conference held in Poland takes on added significance for, in reality, it was an intensified teaching course for some 200 Polish engineers and technicians. There were the two Russians present, that I recall. There could have been one or two more . . . not more than that . . . and probably about 40 others from German, Swedish, English and Slavic speaking countries. Special efforts were made to provide interpretation for the Russians. Since Poland is in a hurry to train its people, it invited experts from many countries to give papers, mostly of a fundamental nature.

The meeting was held in Lodz, a smoke-shrouded industrial center two hours drive from Warsaw. Its big task now is to remove industries from the center of town and get them to the outskirts. It is reminiscent of Manchester, England. It is still a great textile center. The technical institute, which is the heart of research and technical work for pulp and paper and the place where papermaking is taught, is in a former textile mill which has been moved to Russia. From 10 to 20 students a year study here.

**This was an unusual meeting**
since the Poles drew technical leaders not only from England, both Germanys, Sweden and Russia, but also from Czechoslovakia, Rumania and Hungary.

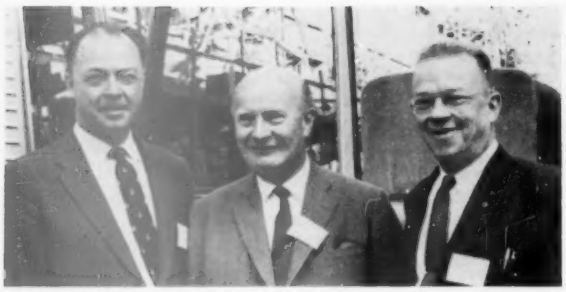
Among those who took part, some are well known in America. Knut Dahl, the young president of AB Kamyr, Sweden, said continuous cooking is now permanently the "winner" over batch cooking. He also discussed Kamyr's combination of new wash systems and screw presses.

C. W. "Bill" Converse, formerly with Sprout-Waldron and now director of Lyddon & Co., Ltd., London, told of building a 72 tons/day wheat straw pulp mill in Hungary. A smaller one in Rumania will use reeds, hardwoods, as well as usual chips. Both these mills will have Pandia Chemipulper continuous digesters. One man controls each

## American equipment as these exclusive photographs show . . .

LANGSTON SUPPLIED two printer-slotters, each of which prints in two colors. Printing is not used now.

RELIANCE DRIVES and controls are used on the slitters as well as on S & S box gluing machines.



VISITING POLISH MILL are familiar industry faces (l to r): Bill Converse, dir. of Lyddon & Co., London, Bill Tittlbach, Leje & Thurne, Sweden, Lovell Cushing, proj. engr. for new Rumanian kraft mill.

TWO OF POLAND'S INDUSTRY leaders attend meeting in Lodz: Jan Grudzinski (left), vice minister of Forests and Forest Industries; Bruno Jamer (right), dir. of the Technical Institute at Lodz.

system. In the larger mill, pulp goes through Selectifiers, three stages of vacuum filters and high density storage preceding the washing.

Another American, Lovell Cushing, formerly manager of Brown Co. operations at Berlin, N.H., and later at Plymouth, N.C., for North Carolina Pulp Co., described construction, under his direction, of the Parsons & Whittemore bleached kraft mill in St. Gaudens in the French Pyrenees. The mill, Cellulose d'Aquitaine S.A., makes about 170 tons per day of marketable pulp, is one of France's more interesting operations.

A Gradall crane from America which operates like a "hand, wrist and arm" is especially useful in handling wood, he said, along with a conventional mobile crane, with grapple, delivering to a U-bar or a 12-knife helical type chipper, for wood already barked in the forests. Four stainless steel clad (3 mm. thickness) digesters, vertical type, of 115 cu. meters capacity, follow. There is a solid stainless steel accumulator for pre-hydrolysis liquor. Steam purging and extra heating prevent this liquor from becoming a black solid. Washing is after Jonsson screens with 3-effect brown stock washing and Sund-Impco valveless vacuum cylinders, with no drop leg or vacuum. For fine screening, two corrosion-resistant rotary perforated plate screens are used. Bauer cleaners follow in three stages. A valveless vacuum Impco-Sund decker follows. Stock then goes to low density storage with 72-inch propeller circulators.

A four-stage Sund-Impco bleach plant is followed by sulfur dioxide solution washing. Chlorine gas in the first stage upflow tower precedes chlorination washer, then a very mild caustic soda stage, with down flow tower. Then hypochlorite stage and final chlorine dioxide which brings brightness to 90 to 92. From hypo washer stock passes through a high density stock pump designed by the late E.P. Cooke, Brown Co., U.S.A., and Mr. Cushing, also formerly with Brown Co., and now made by Sund of Sweden and Impco of U.S.A. With "Figure 8" rotors it handles pulp of any consistency at low power.

The pulp proceeds to the Fourdrinier and Swedish Flakt dryer. To make either rolls or sheets, there are both a cross cutter and layboy and reel and rewinder. Oval Strapping wire tying of bales is part of a semi-automatic finishing system.

Arne Asplund, Swedish inventor of the Defibrator, now in mills all over the world, was another speaker.

### Looking into the future

Bert Priestley, sales manager of Millspaugh, Ltd., England, conjectured as a "futuristic look" a higher mixture of fiber to water on the wire and use of plastic fibers as a substitute for conventional felts and wires.

Two formation methods, Mr. Priestley said, show future promise: (1) Vacuum formation introduced by Millspaugh as early as 1926 and used to make duplex news, and (2) the Inverform introduced at St. Anne's Board Mills, Bristol, England, using two wires, the top wire being inverted and the sheet being formed on the bottom wire. With this system, board can be manufactured at high speeds using a number of wires.

To simplify press sections, he forecast: (1) Use of a large suction roll with a series of small rolls around its perifery and (2) use of high velocity air with unsealed boxes and vacuum in region of 24 inch Water gauge.

For improved drying: (1) Higher steam pressures, reducing number of cylinders needed; (2) forced convection type drying cylinder hoods, but more research is needed before they can be regarded as "perfect"; (3) fluid bed drying, undoubtedly will be useful for certain papers.

Two other suggestions by Mr. Priestley: The first: Two vacuum forming units could be used, each with individual vacuum and high velocity air compartments, served by a common pickup felt and use of a transfer press, also with high velocity air compartment to take the sheet to the main press felt. An efficient and compact arrangement of large suction rolls with multiple presser rolls for press section. A pickup roll to transfer sheet from Simplex press to inverse press. Drying cylinders probably 20 ft. diameter, with high velocity hoods. This would reduce machine room size and make possible speeds of 1200 meters per minute.

The second: Two or more vacuum formers, followed by high velocity air press section. A fluid bed drying section included, with coating section. By such compactness, speeds of 5400 ft. per min. are possible he said.

Dipl.-Ing. Sylvia Schmidt of Maschinenfabrik zum Bruderhaus, Germany, discussed the Stevens Former, developed in a New England mill and used in several U.S.A. mills, that delivers stock directly onto a cylinder without a vat. Also the Sandy Hill Rotoformer, the Pusey Jones Stream-Flow vat, the Black-Clawson flow system and other types of moulds were described. The Inverform invented at St. Anne's Board Mill in England was a ten-year development, she said. Stock at first went off cylinder vats onto a wire with secondary headbox. It was found a top wire was needed, with a doctor blade which scoops water off the back of the top wire at high speed, and the stock is between two wires. Board has been made with four layers at up to 420 meters per minute. Weight of one layer is made up to 300 grams per square meter, with additional layer of 110 to 125 g./sq.m. Newsprint has been made at speeds up to 1200 meters per minute, working only with the wet end. ■

The BDSA's John J. Bartosiewicz tells how on-machine coating has come of age, the facts behind . . .

# The METEORIC Rise of On-Machine Coated Paper

The year 1960 was remarkable in at least one respect. On-machine coated paper reached an unprecedented 1.9 million tons, exceeding for the first time the combined tonnages of uncoated groundwood printing and uncoated book printing grades.

Only 15 years ago, the output of uncoated printing papers was three times larger than on-machine grades. The ascending popularity of on-machine coating over uncoated papers is unquestionable. On-machine coated in 1960 is expected to increase more than 25% over 1956, while uncoated remains below that peak year.

**Rise of on-machine coated** paper has contributed substantially to tonnage gains since World War II's end. It has accounted for 1.6 million of the eight million ton increase from 1945 to 1960 and currently represents 12% of paper production, compared to 4% in 1945. Since 1945 it has far outstripped tonnage gains reported by other major paper grades. Uncoated tonnage rose during the same period by only 800,000 tons—half of what uncoated did. Annual output of body stock for off-machine coating remained fairly stable at around 275,000 tons throughout this period of sharply rising demand, indicating the switch to on-machine coating.

**Use of on-machine coated** paper in periodical, advertising, and some book printing has been a strong influence in its 475% tonnage increase since World War II. With a strong affinity for inks at high-speed printing operations, it is highly desirable in the printing of fine screen halftones. On-chine coated paper, coated on two sides, has enjoyed particular success in the illustrated periodical and book markets because it enables high-quality color reproduction at a relatively low cost. On-machine coated paper, coated on one side, represents less than 8% of the on-machine total.

On-machine coated paper output should expand further in the years ahead, although perhaps not as sharply as in the past. History indicates that a new product assumes a more normal growth rate once the initial market-saturation level is reached. Thus, in the period 1945 to 1950, production rose by a phenomenal 205%; in the next 5 years (1950-55), the output rate of gain slowed to 29%; and in 1955-60 the pace accelerated to 45%.

**Improvements in methods** have raised overall plant efficiency and have provided improved product. Continuing research program within the industry should yield further benefits to the producers and consumers of coated papers. Some on-chine coated paper manufacturers, working with the printing and publishing industries, are producing a lighter weight, coated paper to help offset recent postal rate increase in third-class mail delivery.

The current uptrend in demand for periodicals and books should continue. Although competition from films and foils poses some threat to on-machine (one side) label paper, the development of new uses should largely offset this. Nor is the trend to lightweight on-machine coated (two sides) paper expected to affect future tonnage production gains materially.

Increased demand is expected to result from rising population, school enrollment, educational levels, personal income, and leisure time in the United States. But in addition, growing literacy in a world contracted by air travel advances should stimulate a decided step-up in the globe-wide exchange of information.

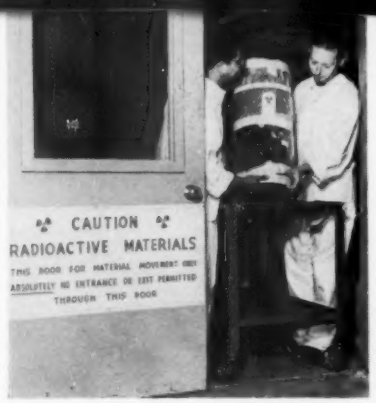
**States producing on-machine** coated papers now number 13, one more than in 1949. Massachusetts curtailed production of this grade early in the 1949-59 period, whereas Washington began its on-machine coating operation in 1955. The states, by Census Bureau regions, are: Northeast region—Maine, New York, and Pennsylvania; North Cental—Ohio, Michigan, Minnesota, and Wisconsin; South region—Louisiana, Maryland, Tennessee, and Texas; West region—Oregon and Washington.

The tonnage output of the respective states is not disclosed because of the relatively small number of producers in each state. However, the North Central region retained its No. 1 status in 1959 by virtue of a 71% increase in output to 751,000 tons, although its rate of gain was markedly below the nation's 92% advance to 1,706,000 tons. The below-average performance reduced North Central region's share of the U.S. total from 49% in 1949 to 44% in 1959.

The second-place region, the Northeast, posted an increase of 110% of 593,000 tons and raised its share of the national output from 32 to 35% in the decade. ■

**John J. Bartosiewicz is program executive for Paperboard, Pulp and Paperboard, Forest Products Div., Business, Defense Services Administration**

**Howard Shearer of American Viscose describes . . .**




# The Growing Use Of RAYON In Papermaking . . .

**In 20 years, the use of viscose rayon by the paper industry has grown from a few thousand pounds to millions of pounds a year. Non-woven materials such as the throw-away lab suits shown above are just the beginning of its many uses. In an age of new products and super-marketing an expert tells how, why it can be used . . .**

It would seem fairly safe to predict broader use than ever of viscose rayon in the paper industry. As it takes a wider look at the new product field and speeds up new marketing research, its eye will naturally fall on rayon. Although designed for the textile industry, rayon has special properties most attractive to use by papermakers —its non-fibrillating, unhydrated character, essential to all fibers for papermaking, to mention one.

Rayon is now designed and produced for the paper industry in a wide range of controlled fiber diameters, lengths, shapes, strengths, colors and other features. These help the specialty paper manufacturers upgrade and extend their present paper lines through use of one or more rayons with regular pulp furnish. Of greater promise is the opportunity offered by rayon fibers, for the specialty paper manufacturer to enter the textile market with an economical wet formed bonded web fabric of good loft, strength and flexibility.

This nonwoven fabric market opening to the specialty paper industry using rayon, now consumes more than 50,000 tons annually. Some authorities predict a 10-15% normal annual growth rate through 1970 for the textile made product. This would still amount only to some 2 to 5% of the textile fiber market and leave a more extensive unsecured potential for wet formed nonwovens even in those applications already covered. While this may not be a spectacular market in the terms of some 43 million tons of annual paper production (U. S. and Canada) it is nevertheless substantial.

Viscose rayon is currently being used as a substantial furnish in papers used for tea bags, desiccant bags, backings for vinyl coatings, condenser paper, absorption tissues, wiping and polishing material, air and oil filtration, overlay or saturating papers, and for decorative identification purposes in greeting cards, pamphlet or book covers and currency. In some of these a thermoplastic vinyl resin fiber is used with rayon and pulp fibers to add stability, heat sealing, molding, laminating and improved bonding to coatings.

**Staple or cut tow**

regular rayon is used for papermaking. Fiber is supplied in various diameters. and in lengths from ¼" to 1½". The tow is supplied in long continuous grouped strands of untwisted multiple filaments of controlled fiber diameter within a range of 12 microns to 23 microns. These particular diameters correspond to 1.5 and 5.5 denier respectively. Denier is the established method of referring to fiber diameter by the rayon manufacturer.

The composite tow made up of these many filaments runs about 22.3 yards/pound. Multiple ends of this tow may be cut simultaneously by the paper manufacturer into straight free fibers of whatever length he prefers.

Such cut fiber has found preference in tissues for fine filtration purposes where careful control of the size of the openings and uniformity of the sheet is required. Regular rayon tow and short cut fibers can be supplied in either a bright or a dull luster. Tow is also available in fast spun dyed colors suitable for cutting into short lengths and for adding to the regular furnish for decorative effects.

For the saturating paper trade, there is a 1.5 denier special white rayon. This has a high whiteness and cleanliness commensurate with the needs of the trade. When saturated with resin and laid up in the laminate it has superior transparency and gives greater relief to the printed design sheet it protects from wear.

Regular rayon has the following properties: Tenacity, conditioned, 2.6 g./denier; Tenacity, wet, 1.3 g./denier; Elongation, conditioned, 14%; Elongation, wet, 19%.

**High strength rayon fiber** should be utilized where high strength and toughness are important, XL, made by American Viscose, is regarded as the strongest rayon staple on the market. Its properties are: Tenacity, conditioned, 4.0 g./denier; Tenacity, wet, 3.0 g./denier; Elongation, conditioned, 30%; Elongation, wet, 37%.

Not only is the strength of this rayon high, but this combination with high elongation makes an extremely tough fiber. It has high rupture resistance. This fiber can be supplied in 1.0 and 1.5 denier in any lengths from ¼" up.

In lengths of ¼" to ⅜", this rayon lends itself to wet laid web operations without further reduction of length. Some carrying fiber or bonding agent is added, generally at the beater, to aid in carrying the XL across the wire of the papermaking machine.

When high strength rayon webs are post bonded with resins, a wide range of properties can be engineered to fit this material into the nonwoven fabric market. Bonded webs for bagging, backing for films, liners, bindings, etc., have all been produced on commercial production equipment.

**Non-thermoplastic rayon,** a unique material, is the only man-made non-thermoplastic fiber with self bonding properties. It is a multicellular non-thermoplastic viscose rayon

## Physical Properties of Some Experimental Examples of WET FORMED BONDED WEBS Made on Paper System in Various Mills

| *Composition* | *Wt./Sq. Yd. (Ozs.)* | *Tensile, Lb./In. (M.D.)* | *(C.D.)* | *Tear* | *Burst Lb./Sq. In. (Mullen)* | *Gauge (Mils)* |
|---|---|---|---|---|---|---|
| Special White Rayon Plus 25% Alpha Pulp | 1.5 | 7.5 | – | 0.46 Lb. (Trapezoid) | 7.6 | 3.5 |
| XL Rayon Plus Binder | 2.1 | 11.5 | 9.5 | 342 Gm. (Elmendorf) | 33.8 | 10 |
| XL Rayon Plus Binder | 4.3 | 15.4 | – | 463 Gm. (Elmendorf) | 73.5 | – |
| RD 101 Rayon | 0.6 | 5.5 | 0.9 | 32 Gm. (Elmendorf) | 7.0 | 2.1 |
| RD 101 Plus Wet Strength Additives | 2.7 | 18.1 | – | 98 Gm. (Elmendorf) | 18.4 | 10 |
| RD 101 Rayon | 1.9 | 13.5 | – | 108 Gm. (Elmendorf) | 42 | 4.2 |
| RD 101 Rayon | 1.1 | 9.9 Lb. (Grab) | – | 0.2 Lb. (Trapezoid) | 3.2 | 4 |
| RD 101 Rayon | 1.5 | 31 Lb. (Grab) | – | 0.4 Lb. (Trapezoid) | 12.6 | 6 |
| RD 101 Rayon | 6.4 | 94.6 Lb. (Grab) | – | 1.2 Lb. (Trapezoid) | 42.4 | 18 |

The Rayon used is 1.5 denier ¼".

Strip Tensile runs approximately 43% of Grab.

M.D.–machine direction.
C.D.–cross machine direction.

1 oz./sq. yd. is equivalent to a 20.8 lb. ream weight of 3000 sq. ft.

fiber possessing a ribbon-like cross section. With this fiber it is possible to produce papers from 100% man-made fiber without refining or working the fiber. Other carrying fibers or activities are not needed to produce sheets of good tensile, tear strength and toughness. To make these papers, it is only necessary to disperse these rayon fibers in water and then handle in the usual manner. Where additional wet strength is desired, conventional wet strength agents can be used.

Avisco's fiber RD 101 is available in commercial quantities in a 1.5 denier ¼" high bonding type which produces papers showing tensile strengths, expressed as breaking length in meters, approaching 4000 in a 40 lb. sheet of 3000 sq. ft., ream weight. Not only are the sheets strong, but they are also characteristically tough. This fiber has also been made experimentally in a lower bonding type, which may produce soft tissues, with breaking lengths of 2500 or less.

An extremely important property of this fiber is its high wet web cohesion. Because of this property, very light weight sheets of 6 lbs./ream have been run successfully on Fourdrinier machines with no unusual difficulty.

A unique property of this fiber is its response to treatment with zinc chloride, caustic soda, or other solutions which tend to swell viscose rayon. Papers so treated will bond more firmly, and show greatly improved breaking lengths. These should find application where a high strength stiff, dense sheet is desired.

A major use for this fiber is as a carrier for unbeaten pulps used in low density papers for filtration, absorbent pads, etc. As little as 10% is effective in holding an unbeaten wet sulfite pulp mat together for transfer from the wire of the Fourdrinier. Among end uses for wet formed bonded webs of RD 101 are: backings for vinyl coatings, carbon paper, condenser tissues, disposable diapers, embossed, crimped and decorative papers, filters, interliners, molded articles, sanitary covers, tapes and ribbons, twisted yarns, wiping tissues.

**Rayon yarn**

is also used as a reinforcing medium. Perhaps more directly related to the conversion and use of paper than with its manufacture, is the introduction of a series of high strength continuous filament rayon yarns or bonded rayon scrim either to the pulp sheet as it is formed at the head end of the paper machine, or is later laminated between two sheets of the preformed paper. Such reenforced material may be further resin treated to impart added endurance to weather and wear. A modified paper product of this type has good resistance to shock, loads and tearing. These features are particularly desirable in industrial packaging, tapes and bagging. It is being fashioned into disposable clothing, sheeting, tentage, and other products normally reserved for textiles.

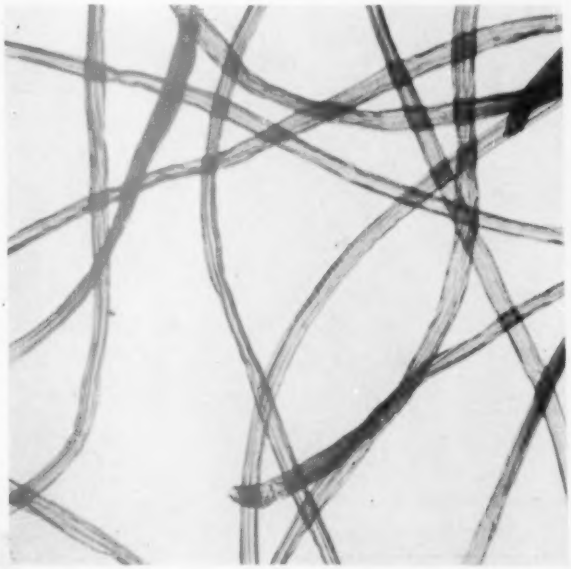
**Short rayon fibers**

1.5 denier ¼", can be dispersed in conventional stock preparation units, such as beaters, pulpers, etc. Lengths of 5/16" and 3/8" disperse equally as well in 3.0 and 5.5 denier respectively. These short cut rayons wet out rapidly and require no special precautions when dispersion is carried out in equipment other than a beater. When beaters are used, care must be exercised to insure that the roll is up, and is being used, only as a circulating medium. Working of the fiber should be at a minimum. Refiners should be avoided. A selectifier may be helpful in removing small fiber balls formed in working the fiber. Beater furnishes of over 2% concentration are not recommended.

Reguar and high strength rayons do not hydrate or fibrillate and have little bonding power in the wet web. Frequently a minor percentage (20-25%) of a beaten papermaking pulp is used

## Some attractive characteristics of rayon for papermaking . . .

UNIFORM STRIATED NON-FIBRILLATING structure of 1.5 denier viscose rayon is shown in longitudinal view after brushing 1.5 hours in beater.



CROSS-SECTION of 1.5 denier non-thermoplastic viscose rayon shows irregular ribbon-like and cellular make-up prior to casting into a paper sheet and drying.

in the furnish. With such a furnish no trouble should be experienced in removing the web from the Fourdrinier wire. In such cases, the beaten pulp should be prepared in the conventional manner, and the rayon fibers added and mixed only long enough to insure a homogeneous furnish before pumping over to the paper machine.

Some bonded web materials of 100% regular and high strength rayon are produced commercially using special techniques generally calling for a beater additive to get the web across the wire. Additives or post bonding is advisable for more permanent or added wet strength in the sheet.

Consistency at the head box should not exceed 0.1%. If wet strength resins are used, head box additions have proved efficient. A Rotoformer or inclined wire Fourdrinier with suction boxes give a more uniform random lay formation.

Felt covered press rolls are recommended to forestall excessive fiber plucking. A rotating top press felt which can be continuously washed gives better results than a felt boot.

Only minor adjustments, if any, are necessary to the dryer sections. Lower than normal temperatures especially on the first and last several cans are suggested in drying lightweight sheets of regular rayon to prevent cockling. A Yankee has been found helpful in this respect. It is recommended the first several dry cans be coated with Teflon to reduce any tendency of the fibers to stick to the surface.

### Long rayon fibers

to 1¾" have been run successfully, but stock preparation differs. The fiibers longer than ¾" normally require some beating, and in general are not recommended for use in pulpers.

Again, when using long, regular or high strength rayon, a minor percentage of papermaking pulp is frequently helpful. The papermaking pulp should be prepared in the usual manner and the correct blending proportion sluiced into a finisher beater. The rayon should then be added to this beater as the water level is being raised. Since the rayon as it comes from the bale is compact, it is recommended that it be hand opened and added behind the beater roll to get as much wetting as possible before hitting the roll. The recommended beater consistency is 1.5 to 2.0%.

Roll pressure should be adjusted to break down the fiber as it is added and to prevent stringing. When any danger of stringing or roping has passed, which should be within 15 minutes of adding the fiber, the roll should be raised slightly to avoid excessive breakdown of the rayon. Under full beater roll action, the rayon will break down rapidly, and overbeating must be guarded against, despite the fact that the other furnish component tends to cushion the action of the roll on the rayon.

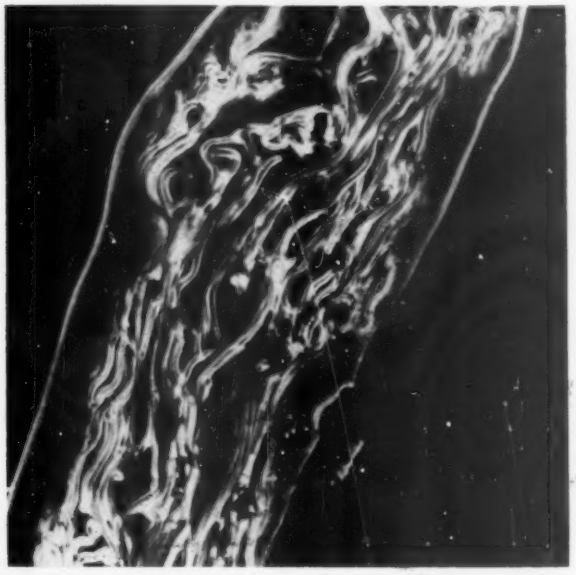
Generally, the rayon, if 1¾" staple is used, will be down to paper lengths in 60 to 90 minutes of beating. If shorter lengths are being used, a proportionately shorter beat will suffice. In all cases, it is advisable to check fiber length and dispersion before dropping to the chest. This can be done simply by stirring a few grams of the beaten stock into a large beaker of water and observing for the presence of long fibers, and the uniformity of distribution. A light jordaning may be advisable after beating; but again, this should be avoided if possible.

After preparation, stock can be handled conventionally, although some modifications in head box dilution or wire speed may be necessary to compensate for the high freeness of the rayon furnish. Head box dilutions of 0.1% or less have been satisfactory.

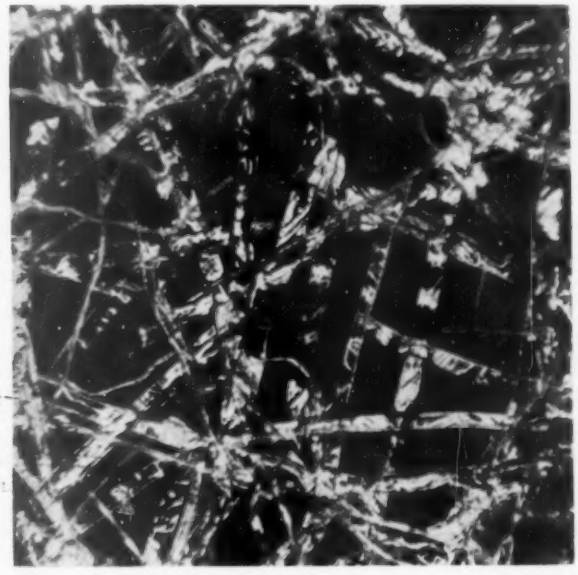
### Physical Properties

In Table I are examples of "modified papers" made on commercial papermaking machines in various mills. Those made from 100% rayon fiber plus bonding additives are especially designed for nonwoven fabric uses. In their various physical aspects they compare favorably with dry processed nonwoven fabrics made on the textile system. For such use the hand or feel of the material and its appearance can be as important as its strength. ■

EDGE OF FINE PAPER SHEET made from 1.5 denier non-thermoplastic rayon shows how fiber structure collapses and bonds under normal papermaking methods.



LONGITUDINAL VIEW of 1.5 denier non-thermoplastic rayon shows irregular ribbon-like structure. Special microphotographs were taken for American Viscose Co.



## Problem: Starting pulp sheet on empty core

Problem: Breaking a dried pulp sheet on completed jumbo roll and starting sheet on empty roll core while sheet is moving.

Place: Alaska Lumber & Pulp Co., Sitka, Alaska.

Solution: Jim Larsen, experienced machine room supt., developed an improved method of making this transfer by using pieces of 3/16 in. rope to start a new roll on core.

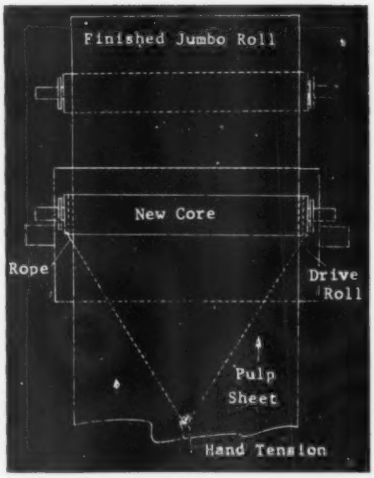
Old roll change method required the coordinated efforts of three men and was always somewhat tricky and dangerous.

First attempt was to loop a 20 foot length of rope around the front journal of a new core. At roll change time, the core was lowered to the drive roll and a crew member walked beneath the sheet and pulled the rope tight, causing the sheet to tear off and wind in spiral fashion on the new core. Flaw in this method was that ropes were sometimes chaffed through by the core edge.

Second, a hole was drilled in the edge of the core so the rope could be attached there instead of at the journal, eliminating broken ropes.

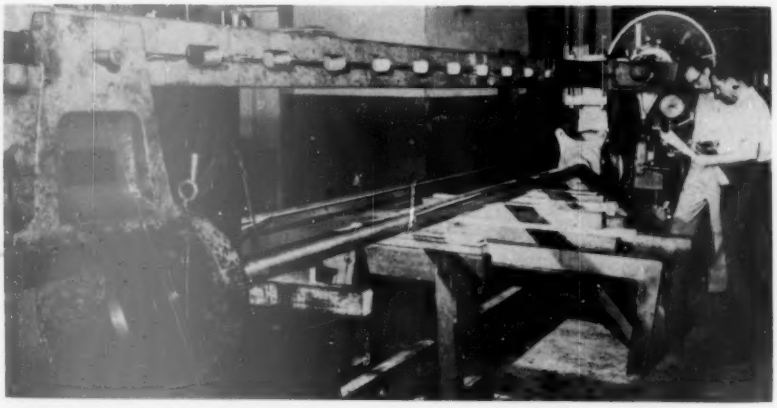
Third and final change was a second hole drilled in the opposite end of the core. The rope is attached to the front end of the core and is cleared from the winder by a wire attached to the frame. At roll change time, the rope is also knotted through the back hole in the core and allowed to hang loose until the new core is started. One man at the operating console then lowers the core to the driven roll while a second man maintains tension at the center of the rope beneath the sheet. The rope tears the sheet from both sides simultaneously and winds the sheet onto the core in spiral fashion. Transfer is achieved without loss of a single piece of pulp.

Only two operators are required to make a roll change. The new method makes a perfect wrap and does not endanger the operators. In addition this new sheet transfer method reduces pulp losses in the finishing room




cutting operation. Rolls are unwound right down to the core. With the previous system, the last several hundred pounds of pulp on each core were normally stripped off with a knife and reused as beater stock.

## Problem: How to stretch table roll life



**PVC PIPE IS SHRUNK onto ordinary steel tubing.**

Problem: To prevent table rolls, rotating at today's super-high machine speeds, from damaging paper web due to constant whipping action. Also rolls must be protected against corrosive process solutions since they must be perfectly smooth and true to 0.030 in.

Place: Moore & White Co., Philadelphia, Pa.

Solution: Replacement of brass units on Fourdrinier table rolls with A. M. Byers Co. PVC pipe over ordinary steel piping. The unplasticized plastic pipe is shrunk onto the outside diameter of the steel core.

Says J. P. McTommoney, M&W president: "We eliminate whipping action by dynamically balancing the PVC pipe when it is applied and turning the O. D. concentric with the journals of the table rolls. Excellent machinability of PVC simplifies operation. Although brass tubing has been satisfactory in the past, it is today impossible to merely increase diameters and reduce the number of rolls to solve the whipping problem."

PVC's smooth and glass-like surface has a lower friction factor than metal and is not affected by paper process acids. Tested for abrasion resistance in sulfuric acid slurries, PVC outlasted stainless. Adding to the problem are vapors that contain sulfuric acid, chlorine and hydrochloric acid. PVC is extremely resistant to chemical attack.

Byers PVC table rolls are said to resist adhesion of the paper filters. They can be furnished to clad any roll size, most popular of which range from 3 to 6 in. dia. in an average length of 144 in.

Cost per year is said to be much lower than that for traditional brass rolls. "A steel body will last indefinitely if clad with PVC pipe," declares Mr. McTommoney, "provided rolled journals are properly mounted in automatic friction bearings." Cost of recovering is a fraction that of complete new roll.

BACHRACH

# SERVICE:

In addition to providing papermakers with felts of the highest quality, we at Albany Felt Company recognize a second, most basic obligation to our customers . . . *service.*

But service can only be as good as management's intent. The quality of the service we have offered has been a special pride of our company for 65 years.

May I reaffirm to my numerous friends in the paper industry that the Albany Felt Company will continue its dedication to the firm principle that our service to papermakers shall be complete and unexcelled.

*John C Standish*

*President and*
*Chairman of the Board of Directors*

**ALBANY FELT COMPANY**
ALBANY, N.Y.

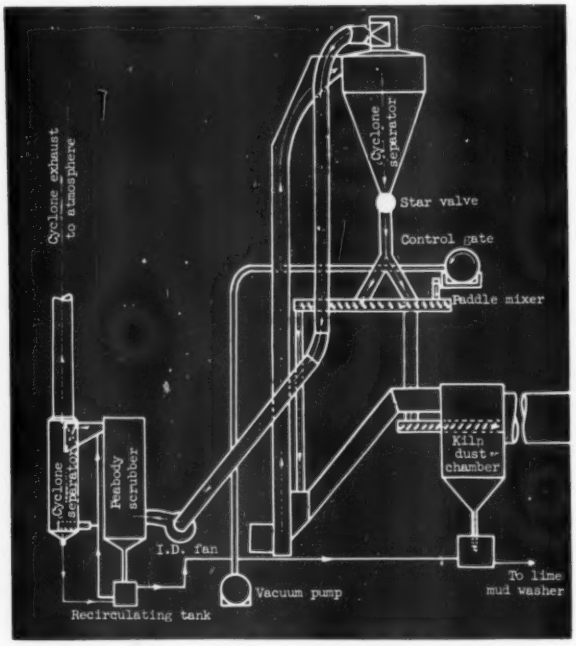
AF

*Dedicated To Paper Industry Progress*

N. Monmouth, Maine  Hoosick Falls, N. Y.  St. Stephen, S. C.
Cowansville, Quebec  Cuautitlan, Mexico

TALK IT OVER WITH YOUR ALBANY FELT SALES ENGINEER

# Pacific TAPPImen probe pulping advances . . .




**PICTURE AND DIAGRAM TELL STORY of how Western Kraft mill economically doubled its lime recovery capacity with installation of new flash dryer. Photo above shows actual installation while schematic at right gives details. Cyclone separator is at left, topped by tall stack. Tank next to it is Peabody scrubber. Flash dryer is at end of lime kiln.**

## How Western Kraft economically doubled recovery capacity

In its first meeting held in Salem, Ore., Pacific Coast TAPPI heard Western Kraft Corp.'s Felix M. Hammack, tech. supt. of the Albany, Ore., mill, describe how flash drying helped increase lime recovery without necessitating installation of a second lime kiln. The mill, organized to operate on residue wood obtained from sawmills and veneer plants in the greater Willamette Valley, started its 120 tpd kraft linerboard operation in Sept. 1955. Plant construction reputedly involved low capital expenditures—a contender for lowest cost in its size class. Ownership is largely vested in major lumber and plywood producers of that area.

The original mill installation included a lime-mud kiln which produced 29-30 tons of reburned CaO daily to meet demands of the plant's 120-125 tpd linerboard production. Plans were under way for increasing linerboard production by end of the first year of operation. This called for doubling lime-mud reburning capacity to 70 tons.

Instead of adding a second kiln, a flash dryer was installed in conjunction with the existing kiln. According to Mr. Hammack, this not only achieved the anticipated tonnage increase but involved significantly smaller capital investment and materially upped efficiency of the reburning process.

The flash drying system, built by Raymond Div. of Combustion Engineering, was installed at feed end of the kiln as the first such unit at West Coast mills. Mr. Hammack says two were recently installed at Japanese mills, making a total of eight now operating in the industry.

The addition eliminates moisture from the lime-mud prior to introduction into the kiln as feed. Hot exit gases from the kiln come into intimate contact with a mixture of lime-mud filter cake and recycled dust. Suspension of this pulverized mixture in the hot gas stream facilitates rapid evaporation of moisture, introduced into the system with the filter cake, enroute from a cage mill to a cyclone separating the main gas stream from dry dust.

About half the recovered dust goes to the kiln as feed, the other half recycled to a paddle mixer pulverizing wet fiber cake preparatory to suspension by hot exhaust kiln gases in the cage mill.

Cooled gases drawn from top of the cyclone go through a modified Peabody scrubber. An after-cyclone recovers the remaining dust particles prior to discharging the gases to atmosphere. Dust particles recovered at the cyclone separator, Peabody scrubber, and at a dust chamber ahead of kiln, go to the lime-mud washer as a weak slurry used as washing medium for lime-mud underflow from the white liquor clarifiers.

Felix Hammack
Tech. Dir.
Western Kraft

Kiln feed is held at moisture content of less than 1%. This, according to Mr. Hammack, has been instrumental in "enabling us to operate continuously without dust carryover problems and, surprisingly enough, the reburned lime product comprises remarkably uniform size pebbles averaging between ¼ and ⅜ in. diameter."

Addition of the flash dryer, along with auxiliary changes such as modifying the scrubber and changes in the filter and its associated vacuum system, increased capacity and efficiency materially.

Hot gases formerly exhausted from the kiln at 800° F. They exhaust now at 1200° F. This higher exit temperature effectively converted the entire 120 ft. length of kiln into a radiant one. The refractory lining was changed accordingly.

Fuel oil consumed for lime-mud reburning (reported as gallons/ton linerboard) dropped from 21.6 to 16.5 —a 23.5% reduction. Mr. Hammack attributes 60% of the thermal efficiency gain to flash drying of wet feed, the rest to modification of associated equipment.

J. B. Esselman
Asst. Pulp Supt.
Georgia-Pacific

## Georgia-Pacific reports success with new pulping system

When it came to expanding the Georgia-Pacific Paper Co. plant at Toledo, Ore., a pulping system quite different from the existing one was installed to handle additional production. The expansion, increasing rated capacity from 350 to 600 tpd, went into production last spring.

After seven months operation the results achieved were reported as "reassuring enough to strengthen the belief this (new) system should have advantages over that normally employed . . . and lead to the conclusion that departing from the conventional is not necessarily a risky undertaking." So states J. B. Esselman, asst. pulp mill supt., of the G-P kraft pulp-paperboard plant.

No. 1 stock system, a conventional kraft hook-up, is tributary to the four original digesters. System No. 2 draws from the three new digesters and No. 4 digester—the latter connecting with both systems. Facilities of the second system include a flat-bottom blowtank in which two Impco Solvo-Fibrilizers operate, two Impco centrifugal screens, a 4-effect Swenson washer and a thick-stock pump delivering pulp to storage.

An 8 ft. diam. x 9 ft. high cone sets at bottom center of the 20 ft. diam. blowtank. The two Solvo-Fibrilizers, mounted 3 ft. above bottom of the tank, are positioned about 6 ft. from the cone. These processing units replace the conventional blowtank agitator and pump for delivery to screens, according to Mr. Esselman. "Agitation is accomplished by the flailing action of the wiper blades and the circulation of a given amount of pulp back into the blowtank . . . Circulation is through 4 in. take-off lines on the discharge of each fibrilizer . . . Pumping action of the fibrilizers has been quite satisfactory.

"As a primary refiner the fibrilizers are doing a thorough job. Large knots and fiber bundles are nowhere in evidence, although the appearance of hair-like fibers prove they once existed. Knots and undefibered chips are reduced to smaller size in the fibrilizers by passage of this material between the wiper blades and the plates."

Extraction is through ⅞ in. diam. holes in plates separated from wiper blades by ⅛ in. spacing.

Centrifugal action of the fibrilizers "provide an excellent means of classification," Heavy material (rocks, metal, etc.) gravitates to bottom of the blowtank and is removed periodically. Adequate separation is indicated by the fact that none of the tributary equipment has yet been damaged.

Stock from the fibrilizers passes through DeZurik regulator and magnetic flowmeter to two Impco pressure screens. These were originally equipped with screen plates having 0.117 in. diam. holes and slightly less than 20% open area. Trial use of plates of other specifications resulted in selecting those with 0.140 in. holes and open area of 24.5%. Cleaner pulp at larger through-put resulted from screen plates of these specifications.

## Economy achieved with swing to liquid sulfur

Changing over from solid sulfur to liquid sulfur transported in leased tank cars was a factor in achieving economies at Publishers' Paper Co.'s new sulfite mill at Oregon City. Modernizing the production of sulfur dioxide for making zinc hydrosulfite used in groundwood bleaching was another. Chem. engr. Donald R. Davis described the systems.

As result of making zinc hydrosulfite from purchased sulfur dioxide during periods the sulfite mill was inoperative, it was determined that less zinc was required under those conditions than when using the sulfur dioxide solution normally provided by the sulfite mill.

Now part of the sulfur burner gas compressed to 4-8 psig for fortifying the sulfite cooking liquor is diverted to a sulfur dioxide absorption system. There it is converted to a weak (2%) solution which is heated, stripped, cooled and absorbed in water at an average concentration of 7%, for groundwood mill use.

Even under adverse summer conditions the new system produces 6% acid at 5 gpm as compared to 4 gpm capacity for the old system under favorable conditions. Winter capacity of present set-up is 6.5 gpm of 8% acid. Summer capacity could be increased by using cold well-water or larger pumps and larger educator; winter capacity can be upped with a larger educator, according to Mr. Davis. ■

Donald R. Davis
Chemical Engr.
Publishers' Paper

# The cost-saving way to handle pulpwood and small saw logs

If you load, unload, stack, or lift-carry timber weighing up to 3500 lbs, you'll be money ahead 3 ways by handling with a Case 310 *Utility* Log-loader:

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Third: costs you less when it "sits-idle"

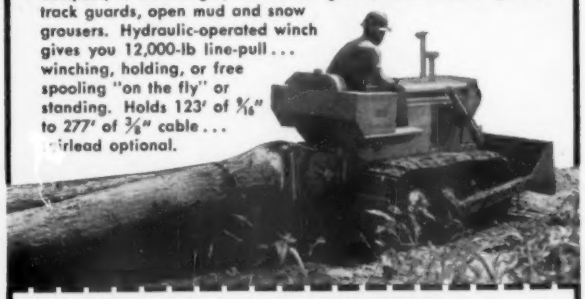
Husky, quality-built Case 310 *Utility* Loader costs less initially because power and lift capacity are "just right" for medium-weight jobs . . . you don't pay extra for over-size "iron" and capacity you don't need. 310 is less expensive to operate and maintain, too, because it has a small appetite for fuel, requires fewer and smaller parts for repairs. Your lower investment automatically cuts cost of insurance and other fixed charges. And when your 310 "sits idle" in bad weather or off-season, you can figure the "cost" as little as 40% of that for over-size rigs.

Powered by high-torque Case *gasoline or diesel engine*, the 310 gives you 5815-lbs pull-power to start and skid a string of logs in rough territory . . . or to dig its fork under a pile of timber and pick up a 3500-lb load. Tractor reverses quickly with shuttle shift . . . turns short *smoothly*, with power always on *both* tracks. Log fork rolls back 23° at ground, lifts 9'5" high, reaches 67" ahead of tractor, discharges easily onto trucks or piles at 7'9" high.

Why not find out how 310 will work on your show? Call the Case Dealer and ask for free demonstration; or send coupon for detailed information.

**WOODLAND SPECIAL TRACTOR**

This load-lugging Case 310 tractor is available for work in heavy brush as drawbar unit, or with choice of four wide-mount dozer blades. Equipment includes grille and engine guard, brush bumpers, front weight, crankcase guard, transmission guard, track guards, open mud and snow grousers. Hydraulic-operated winch gives you 12,000-lb line-pull . . . winching, holding, or free spooling "on the fly" or standing. Holds 123' of 5/16" to 277' of 3/8" cable . . . fairlead optional.



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SPECIAL BARGES MOVE CHIPS from sawmills to Crown Zellerbach Canada's pulp and paper mills at Duncan Bay (Elk Falls Co.) At right, Roots-Connersville blower system loads chips onto barge.

# Latest Methods for Handling Chips

## A concise report from British Columbia and U.S. West Coast mills on transporting, storage and recovery of chips

The success of sawmill chips for pulping by West Coast mills has stimulated much interest in Eastern Canada, Northeastern and Southern U.S. Other mills want to know as much as possible about the experiences of others before they decide on the switch to chips.

In past issues, PULP & PAPER has presented several reports on the use of chips and outside chip storage. Now, the editors present a round-up based upon a meeting of the Traffic Section of the Canadian Pulp & Paper Assn., in Vancouver, B.C., and several technical reports from the American Pulpwood Assn.

From the CPPA meeting in Vancouver, PULP & PAPER's Canadian Director Charles L. Shaw reports that Crown Zellerbach Canada has pioneered chip use for some 25 years in British Columbia and now produces chips at three of its own sawmills and has contracts with more than 20 other mills to buy all their wastewood chips.

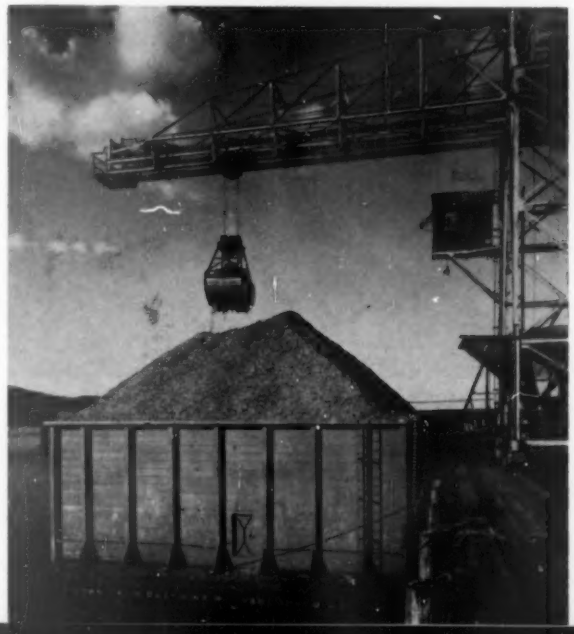
**Chips are measured two ways**

by CZC. Volumetrically, by units of 200 cu. ft.; and bone dry (b.d.), in which moisture is removed from the chips and measurement based on the b.d. weight remaining. The volumetric method is used when buying chips in scow or barge. The b.d. measure is for rail cars. For CZC's purposes, a b.d. unit of chips is equivalent to about 2400 lbs. of b.d. wood.

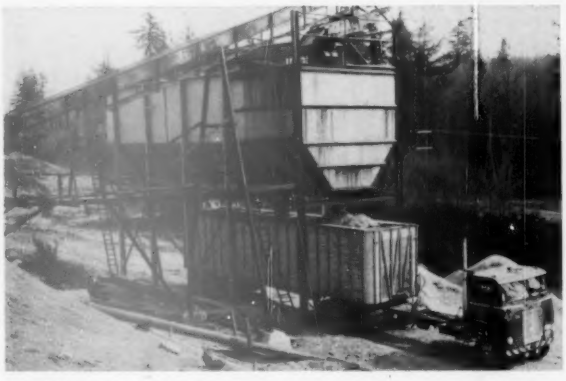
CZC prefers b.d. unit in railroad loading because its rail rates are based on incentive weights related to the load on each car. By air-loading it is possible to get up to 20% more weight of chips in a car. There would be no incentive to the supplier to compact chips for maximum weight per car, if CZC were to buy railroad chips on a simple volumetric basis. ■

[1] Cf. APA Technical Releases Nos. 60-R-36, Western Chip Handling and Transportation; 60-R-46, A Method of Chip Handling and Measuring; and 60-R-49, Spaulding Pulp & Paper Co.'s. Chip Unloading Pit.

CRANE UNLOADS CHIP BARGE at Elk Falls division of Crown Zellerbach Canada at Duncan Bay.



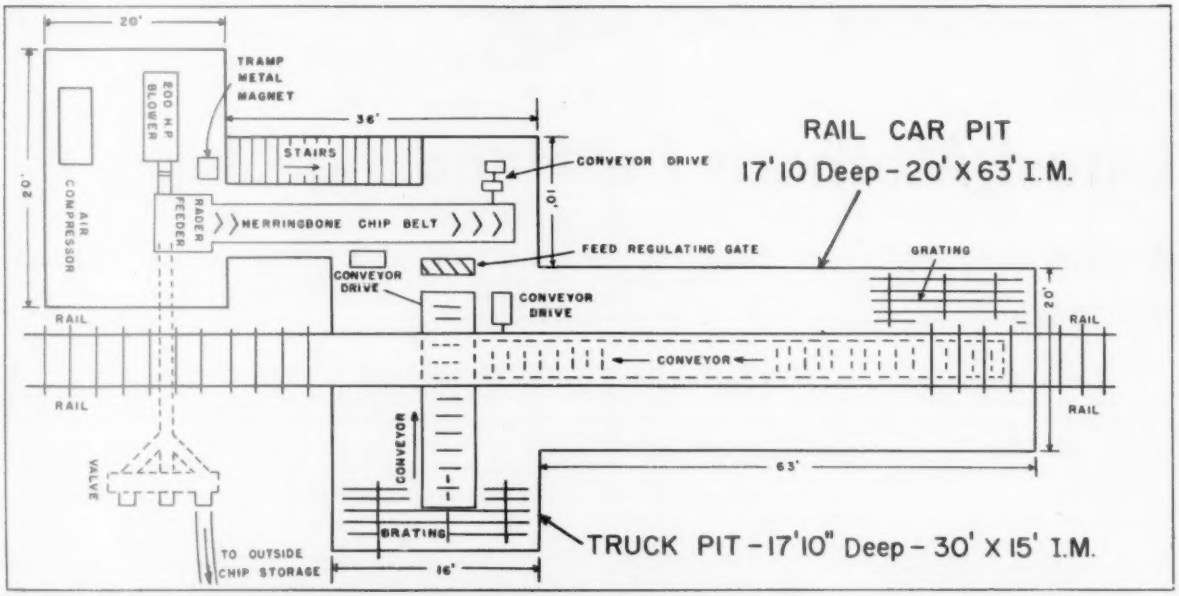
## Methods used for loading, unloading trailers and rail cars

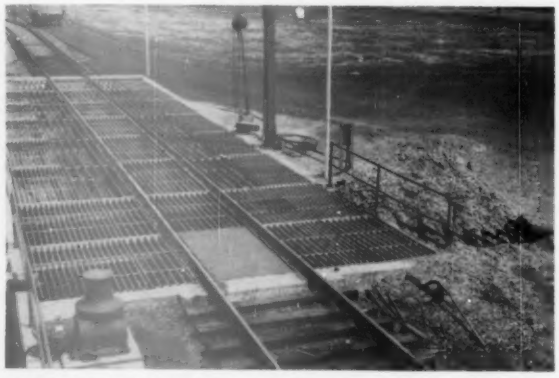


OVERHEAD LOADING is feature of this 25-unit chip bin. Chip screen is on top of chip conveyor and a distribution system separates fir and hemlock chips.

SIDE DISCHARGE chip unit has 60-unit capacity. Star feeder facilitates loading to 10-unit, end-dump chip trailer. Chips are transported approximately two miles.

## Chip unloading pit system at Spaulding Pulp & Paper Co.



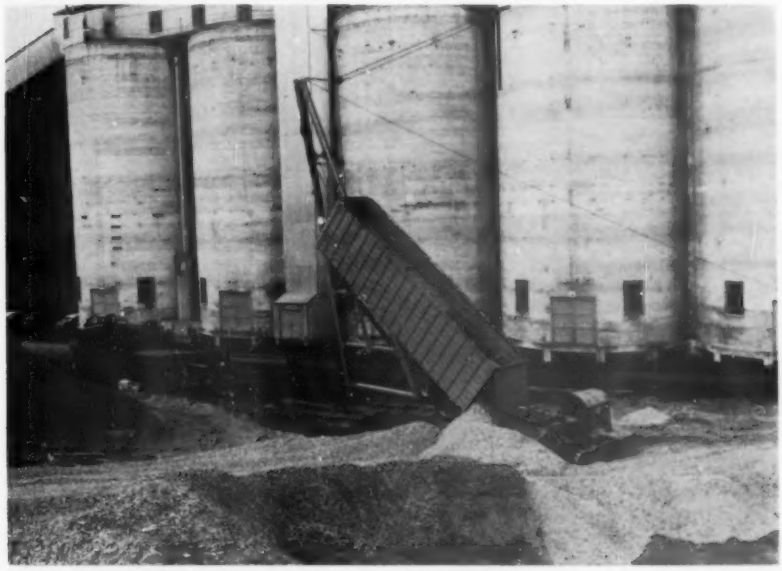
PIT UNLOADS CHIPS from bottom-dump railway chip cars or self-dumping unloading chip trailers at Spaulding Pulp & Paper Co. Rail car pit has one-car capacity, 22 units. Truck scale can be seen at extreme left.

CLOSE-UP OF PIT shows steel grating which covers entire top of unloading pit. Inverted V-shaped form under grating and between railway tracks assures uniform chip distribution as chips fall to conveyor below.

# Various systems for storing and reclaiming chips

DIRECT UNLOADING to chip pile from semi-trailer. A 13-unit belt moves chips to a portable conveyor. Small hopper at base of loader accommodates discharge rate of 1 unit of chips/minute.

INDIRECT LOADING uses pneumatic system to stockpile chips. One pipe conveys chips from truck dump to cyclone to pile, while other pipe leads from pneumatic unloader used for rail cars.



TEMPORARY UNLOADING facility on a chip pile. A-frame is used with donkey engine at a separate location with temporary roadbed built out and over chip pile. Dozer-blade tractor removes chips.

PERMANENT UNLOADER at Publishers' Paper Co. Electric hoist on four-legged tower unloads trucks and vans.

FORK TRUCK UNLOADS semi-trailers by special fifth wheel attachment. Angle of bracket on fifth-wheel provides for maximum tilting for dumping trailers; 60° can be reached with a 17½-ft. lift truck.

FIFTH-WHEEL ATTACHMENT for fork truck in close-up. Semi-trailers have folding kingpin mounted as close to front of trailer as possible. Lift truck has trailer brake controls for maneuvering and unloading.

# Industry Plants Record 450,000 Acres

## during 1959-60 planting season for all-time high reforestation

The nation's industrial timberland owners covered an estimated 450,000 acres with new young trees during the 1959-60 planting season, according to a survey by American Forest Products Industries.

This is an all-time high for forest industry reforestation and an approximate 10% jump over the preceding season.

The survey covered manufacturers of lumber, pulp, paper, plywood, hardboard, and other forest products firms who own and manage private timberland.

J. C. McClellan, chief forester for AFPI, which sponsors the nationwide Tree Farm program, stated, "When all the values of the forest, including wood products, recreation, wildlife, soil and water conservation are considered, the reforestation achieved on privately owned timberlands is a major contribution to the country's economy and security.

"The forest industries in the 1959-60 planting season appear to have established a new record high for seedlings and acres planted. Greatly increased activity in direct seeding of forest lands will add untold millions of trees on thousands of acres to the overall totals," he reported.

"In addition to extensive planting on their own lands," said the forester, "many companies help neighboring landowners get a tree crop into production by providing technical advice, mechanized tree planting equipment and seedlings. The landowners receive this help free and are under no obligation to sell their marketable timber to any particular firm. Forest industry members are interested primarily in getting all usable tree-growing land into production."

On a national basis, forest industry firms are working with more forest land owners than ever before. This increased interest has been stimulated by the Tree Farm movement and the new Busy Acres program.

Noticeable trends in establishing new forests are (1) some type of site preparation ahead of planting; (2) direct seeding—notably by helicopter—and (3) the improvement of nursery stock through genetics.

**MORE THAN 240 MILLION NEW YOUNG TREES were planted by the nation's forest industries in the 1959-60 planting season according to survey of American Forest Products Industries. This is an all-time high, topping 1958-59 season by about 10% cites AFPI. This is in addition to countless millions of seedlings that companies help neighboring landowners to plant.**

| Company | Seedlings | Acres | States Where Planted |
|---|---|---|---|
| Bowaters Carolina Corp. | 2,700,000 | 3,950 | Va., N.C., S.C. |
| Brown Co. | 45,000 | 45 | Me. |
| Brunswick Pulp & Paper Co. | 4,250,000 | 8,000 | Ga. |
| Champion Paper and Fibre Co. | 2,200,000 | 2,402 | N.C., S.C., Ga. |
| Continental Can Co., Inc. | 31,000,000 | 36,772 | Ga., N.C., S.C., Fla., Ark., La., Va. |
| Crandon Forest Farms | 100,000 | 100 | Iowa |
| Crown Zellerbach Corp. | 17,360,000 | 20,580* | La., Miss., Ore., Wash. |
| Diamond National Corp. | 50,000 | 55 | N.Y. |
| Glatfelter Pulp Wood Co. | 1,400,000 | 1,656 | Pa., Del., Md., Va. |
| Great Northern Paper Co. | 275,000 | 230 | Me. |
| Gulf States Paper Corp. | 3,978,500 | 4,973* | Ala. |
| Halifax Paper Co., Inc. | 1,500,000 | 1,750* | N.C., Va. |
| Hammermill Paper Co., Inc. | 150,000 | 580 | Pa. |
| Hudson Pulp & Paper Corp. | 4,000,000 | 5,700 | Fla. |
| International Paper Co. | 44,820,000 | 65,000* | N.C., S.C., Ga., Fla., Ala., Miss., La., Ark., Tex. |
| Johns-Manville Products Corp. | 1,250,000 | 1,250 | Miss. |
| North Carolina Pulp Co. | 7,500,000 | 11,000 | N.C. |
| Olin Mathieson Chemical Corp. | 400,000 | 400 | Ark., La. |
| Oxford Paper Co. | 2,500 | 3 | Me. |
| Rayonier Incorporated | 15,650,000 | 21,300* | Fla., Ga., Wash. |
| Riegel Paper Corp. | 9,700,000 | 11,500 | N.C., S.C. |
| St. Regis Paper Co. | 35,655,000 | 35,905* | Ala., Fla., Ga., La., Miss., S.C., Wash., Vt., N.H., N.Y. |
| Scott Paper Co. | 5,800,000 | 9,180 | Me., Ala., Miss. |
| Simpson Logging Co. | 250,000 | 500* | Wash. |
| Sonoco Products Co. | 7,000 | (exp. plots) | S.C. |
| Southern Johns-Manville Prod. Corp. | 1,000,000 | 1,200 | Va. |
| Southland Paper Mills, Inc. | 425,000 | 475* | Tex. |
| East Texas Pulp & Paper Co. | 20,000,000 | 22,000 | Tex. |
| Union Bag-Camp Paper Corp. | 21,750,000 | 30,000 | Ga., Fla., S.C. |
| West Tacoma Newsprint Co. | 200,000 | 400* | Wash. |
| West Virginia Pulp & Paper Co. | 9,472,000 | 13,697 | S.C., Ga., Va., N.Y., W. Va., Ohio, N.C. |
| Weyerhaeuser Co. | 4,650,000 | 7,750* | Ore., Wash. |

After acreage * indicates direct seeding will be carried on.

**Comments by companies . . .**

Rayonier Inc., reports that "land reclamation and forest genetics programs are continuing projects of Rayonier's Southeast Timber Division. Controlled studies on forest fertilization of pine plantations are also an important project. In the last few years the company has successfully reclaimed thousands of acres of land formerly infested with weed trees (scrub oak and palmetto) or inundated by swamps and/or submerged land."

B. E. Allen, manager, woodlands division, Union Bag-Camp Paper Corp.: "We are increasing emphasis on the preparation of sites prior to planting to the extent that over 70% of planted areas in the 1959-60 season will have had some mechanical treatment prior to planting. We are also developing seed orchards for the production of pine seed of superior quality to satisfy future seed requirements." The company's Bellville, Ga., nursery will produce 21,750,000 seedlings this season.

"Increasingly interested in direct seeding by helicopter on prepared (scarified) seed beds. Net cost is less than hand planting seedlings and survival experience favorable. Animal damage by rodents and game animals becoming increasingly severe. Active, aggressive, federal research program on controls is indicated," says a report from the Pacific Northwest. ■

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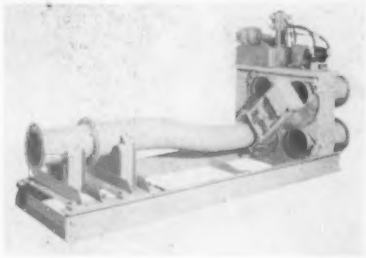
HOOKER CHEMICALS PLASTICS

# NEW EQUIPMENT

## Automatic chip valve
### . . . introduces automation

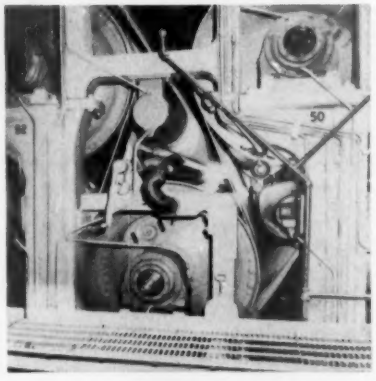


*Applications:* For directing flow of chips into any one of two to eight pneumatic lines.
*Advantages:* New valve brings automation to a similar device that required hand switching of the offset pipe section of the valve. Entire assembly can be set up to function automatically, to keep several bins filled from a common source. Or, it can operate by remote control, to switch flow of chips from the digesters to open storage or back again.
*Specifications:* Valve consists of series of ports that are actually the termini of pneumatic lines that lead to bins, digesters, open storage or other destinations for chip flow. Offset pipe section connects desired port to incoming feed line. When chip flow is to be switched from one line to another, actuating switch causes chip feeder to stop while original line is cleaned with air. Sleeve then retracts, disconnecting the offset pipe from the port. Offset pipe rotates to the new port, where it strikes a limit switch, causing the sleeve to close and the feeder to start again. Basic model is operated hydraulically, but air-operated models are available. Valves can be obtained with two to eight ports in both hydraulic and air-operated types.
***Supplier:*** **Rader Pneumatics Inc., 1739 N. E. 42nd Ave., Portland 13, Ore., Tel: ATlantic 2-7767.**

## Tray deaerators
### . . . custom engineered

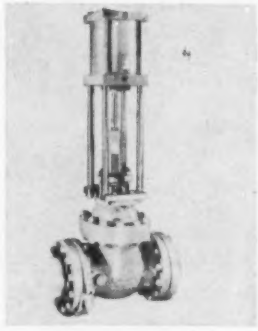
*Applications:* To provide protection against corrosion of boiler tubes, internals, feedwater lines, auxiliaries and condensate return lines by removing non-condensable corrosive gases from boiler feedwater.
*Advantages:* Boiler tube and equipment life prolonged, reducing costly shutdowns for repairs. Integrating this equipment into the boiler feed system is said to "pay the added bonus of lowered plant fuel costs by effecting recovery of heat from exhaust steam that would otherwise discharge direct to the atmosphere." Unit is built to withstand corrosive gases it removes.
*Specifications:* Effective deaeration of boiler feedwater guaranteed to specified low quantities of gases (0.005 ml. oxygen per liter of water and zero $CO_2$) regardless of variations in load or amount of gases initially present. Counter-flow design will meet guarantees at any load from 0 to 100% of rating with as little as 30°F temperature rise at any steam pressure from ½ psig up. All water-contacting tray and tray chest internals are made of corrosion-resistant stainless, are designed to prevent undeaerated or partially deaerated water from contacting outer shell or heads at any point.
***Supplier:*** **Permutit Co. (division of Pfaudler Permutit Inc.), 53 West 43rd St., New York 36, N. Y., Tel: OXford 7-6600.**

## Ventilation unit
### . . . for more uniform drying



*Applications:* For a more uniformly dried sheet through improved ventilation of vapor pockets formed by the sheet, dryer and felt rolls.
*Advantages:* Dryjector forces fresh heated air into centers of pockets, dispelling moist vapors toward edges of sheet and into exhaust system.
*Specifications:* In supplying air to dryer pockets, machine doctorbacks and portions of hollow framework are utilized. Risers from air supply ducts are connected to segments of hollow framework, and flexible hoses in turn connect framework outlets to doctorbacks, which carry air to center of machine and discharge it into pockets (see illustration). This air, plus that from a similar arrangement at the opposite side of the machine, constantly ventilates dryer pockets to displace saturated air and to effect near-uniform web drying. Alternate pockets ventilated by tubes extending toward center of machine from each side. Circulating fan and air heater are furnished, as is distribution ductwork.
***Supplier:*** **J. O. Ross Engineering (division Midland-Ross Corp.), 730 Third Ave., New York 17, N. Y. U. S. A., Tel: YUkon 6-9090.**

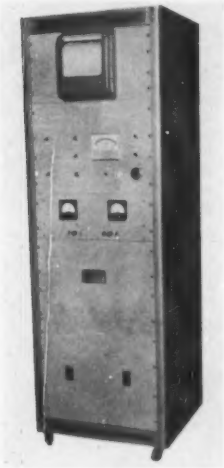
## Pulp stock valves
### . . . meet operating conditions



*Applications:* These cylinder-operated iron gate and pulp stock valves are adaptable to outside screw and yoke, iron body wedge or double-disc gate valves, and to pulp stock valves.
*Advantages:* Factory-installed valves with cylinders are available, or cylinders may be had in kit form for rapid in-the-field installation on Crane iron body hand-operated valves. Cylinder installation on valves already in service can be accomplished, says the manufacturer, in 30 min. or less.
*Specifications:* Valves are actuated by a double-acting cylinder, using water, air or oil as the operating medium. Cylinders are controlled by operation of a four-way valve, which may be located in any convenient place within reasonable distance from main valve. Fixed orifices in the cylinder ports maintain operating speed of 1 in. per sec., minimizing slamming and sticking. Seals are of pressure-sealing type and meet Joint Industry Conference standards. Tube and seals are of Teflon, immune to damaging effects of all hydraulic fluids, air, water and gases. Piston rod system coupling provides visual indication of valve disc position, can also be used for emergency manual opening or closing.
***Supplier:*** **Crane Co., Industrial Products Group, 4100 So. Kedzie Ave., Chicago, Ill. Tel: LAfayette 3-2900; and Crane Co., 62 East 42nd St., New York, N. Y.**

## Basis weight gauge

**. . . accuracy set at ±1%**



*Applications:* To measure paper weight during manufacture without moisture errors.
*Advantages:* Electronic beam senses weight with accuracy of ±1%. Beam is passed from one side of paper to other without physical contact and is translated into electronic signals. Master control unit gives reading of paper weight and moisture content. Records weight across the sheet as well as in strips.
***Supplier:*** **PolyTech Research Inc., 25 North Texas St., Orlando, Fla.**

## High-velocity dryer

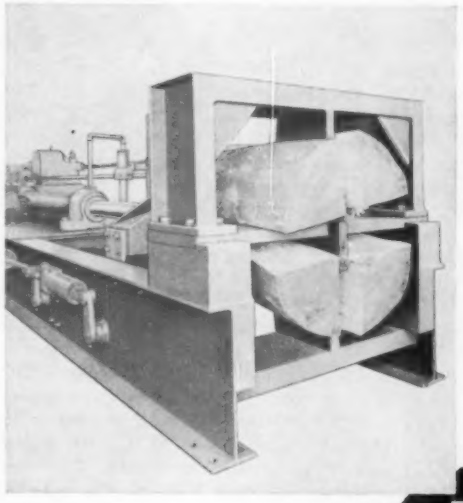
**. . . reduces operating costs**

*Applications:* For drying paper webs.
*Advantages:* Production is said to be increased and cleaning and maintenance costs reduced. Featured is use of spring-loaded discharge nozzles that permit quick changing for cleaning. Special design also permits all air delivered to top and bottom of web to be precisely controlled and evenly balanced. Nozzle design eliminates side flow of spent air and insures equal drying across web.
*Specifications:* Each drying zone is supplied with own air heating and circulating system, including supply fan, steam coils, fresh air supply and recirculation and exhaust ductwork.
***Supplier:*** **Frank W. Egan & Co., South Adamsville Rd., Somerville, N. J., Tel: RAndolph 2-0200.**

## Compact pneumatic products

**. . . any combination available**

*Applications:* For applications requiring high degree of performance, but where standard equipment is too large to fit space available. Line consists of small, high-performance manual- and automatic-drain compressed air filters; pressure regulators; diaphragm type relief valves, and Micro-Fog lubricators.
*Advantages:* Small combined filter-regulator unit is featured. Filter removes foreign liquids and solids from compressed air line, while pressure regulator section controls line pressure. Three compact units (filter, pressure regulator and Micro-Fog lubricator) make up combination Micro-Fog Lubro-Control unit that automatically injects continuous fog of extremely fine oil particles into compressed air line, providing lubrication for air-operated devices or for machine bearings. Entire unit is slightly larger than man's hand.
*Specifications:* Any combination of units is available. Regulators and relief valves used with air, water, oil and similar fluids. All units made for ¼-in. pipe. Regulators and relief valves may also be obtained for ¾-in. pipe.
***Supplier:*** **C. A. Norgren Co., 3400 South Elati St., Englewood, Colo.**

# ONE STROKE DOES IT!

## MURCO HYDRAULIC WOOD SPLITTER

- **For processing logs too large in diameter to be handled by the chipper.**
- **Capacity approximately 1 log per minute.**

The MURCO Hydraulic Wood Splitter does the job so that handling and number of operations are reduced to a minimum. It is equipped with a Star type stationary axe that quarters the wood in one stroke. Its capacity is approximately 1 log per minute (based on the calculation that it takes about thirty seconds to load the machine with the log to be split). Extremely heavy construction, this is equipment designed for heavy duty . . . base is an all-welded design from structural steel . . . axe knives are steel plate flame hardened and strongly reinforced to withstand the impact of splitting . . . cylinder and ram of heavy duty construction Typical installations — Rayonier, Inc., Doctortown, Georgia; Olin Mathieson Chemical Corp., Monroe, Louisiana; Scott Paper Co., Mobile, Alabama; Owens-Illinois, Tomahawk, Wisconsin; Container Corporation of America, Fernandina Beach, Florida; Kansas City Star Co., Park Falls, Wisconsin.

**WRITE**
for proposal and quotations to meet your pulpmill requirements . . . specify maximum diameter and length of wood to be split.

Overall dimensions of MURCO Hydraulic Wood Splitter for 36" diameter wood 5'3" long are 21' long x 5'2" wide, x 5'8½" high.

**D. J. MURRAY MANUFACTURING CO.**
*Manufacturers Since 1883* WAUSAU, WISCONSIN

# STRICTLY PERSONAL . . .

starts on p. 35 . . . of director of manufacturing for Ditto Inc., Chicago. He was at one time associated with **A. T.** Kearney & Co., management consulting firm. . . .

**E. J. (Erv) Goes,** a veteran of 47 years with Koehring Co., Milwaukee, retired December 31. He was advertising and publicity mgr. from 1932 to 1959 and since 1959 served as publicity mgr. in charge of shows, conventions, exhibits and trade association work. . . . **Evans Wilhoyte** is appointed to the new position of factory service mgr. for the Wright Saw div., Thomas Industries Inc., Sheboygan. Wis.; for the past two years he has been project engineer.—Don W. Zeigler.

## Pacific

**N. Bardeen** **Gates** **M. Bardeen**

"Dean" Robert A. Gates was honor guest at a party signaling his retirement after nearly 50 years' active participation in the paper industry, the last 25 in San Francisco for Everett Pulp & Paper Co. (now Simpson Paper Co. div., Simpson Lee Paper). Shown with Mr. Gates are **Norman Bardeen,** vice pres., and **Maxwell D. Bardeen,** pres. of Simpson Lee Paper Co.

**Lloyd Longino,** after 5 yrs. in engineering dept. of Bauer Bros. Co. at Springfield, O., moves to Springfield, Ore. as sales service rep. according to **Kenneth Wylie,** Bauer's Western dist. mgr. . . .

Directors of Potlatch have named two executives to succeed Mr. Bundy as president and gen. mgr.—**Edwin W. Davis,** St. Paul, Minn., as president, **Edwin C. Rettig,** exec. vice pres., Lewiston, as gen. manager. Mr. Davis, who succeeded **G. F. Jewett** as chmn. of board of PFI in May 1957, retains that position and continues residence in St. Paul. He helped found Wood Conversion Co. of which he was successively gen. mgr., 1st vice pres. (1939), exec. vice pres. (1944); became president in 1947 and resigned this position early last year but continues as board chairman. He is a director of Northwest Paper Co. and several other firms. Mr. Rettig joined PFI as a timber cruiser, advanced through positions of land agent, chief forester; became asst. gen. mgr. in 1939, and has been exec. vice pres. since 1956.

**Robert P. Miller,** safety engr., Long-Bell Div. International Paper Co., Longview, Wash., promoted to coordinator of safety and personnel, Western Operations, Long-Bell Div. . . . **Frank Moulton,** technical asst.-steam & power, Crown Zellerbach Corp. Lebanon (Ore.) Div., transfers to CZ Camas (Wash.) Div. as gen. supervisor-steam power maintenance and operations. . . .

Forest Industries Radio Communications re-elected **Robert W. Olin,** Potlatch Forests Inc., as chmn. of national executive committee for 1961; **Art Nelson Jr.,** Champion Paper & Fibre Co., was elected 1st vice chmn., **Rae L. Johnson,** Georgia-Pacific Corp., 2nd vice chmn.; **Elmer L. Surdam** continues as secty-mgr. FIRC, Eugene, Ore. Members of this organization's western div. exec. committee for 1961 include Messrs. Olin, Johnson, **Nelson Jeffers** of Weyerhaeuser Co.; **Stan Keesy,** Diamond National; **Oscar Levin,** Simpson Logging Co.; **Raymond Luthy,** Publishers' Paper Co.; **Rod Petersen,** Pacific Lumber Co.; **A. J. Sandoz,** International Paper; **George Schroeder,** Crown Zellerbach; **Wilton Vincent,** Rayonier Inc.; **Chester Thomas,** Boise Cascade Corp.; **Fred Lemery,** Emerald Loggers' Assn.—Louis H. Blackerby

## South

**Sture G. Olsson,** pres. and gen. mgr., The Chesapeake Corp. of Virginia, has been elected president of National Paperboard Assn.

### Van de Carr Dies

Charles R. Van de Carr Jr., 74, former president and director of the Mead Corp., died recently at St. Petersburg, Fla. Famed in the industry as an inventor as well as an engineer and administrator, he was responsible for development of the Van de Carr slice in the early 1920s.

Mr. Van de Carr became president of the Ohio firm in 1948 and retired from that position in 1952, although he remained an active member of the board until 1957.

Early in his career Mr. Van de Carr served as a paper mill supervisor for Laurentide Co. Ltd., Grand Mere, Que. It was here that he helped install the first 1,000-ft. newsprint machines ever erected in Canada. In 1926 he designed and built the St. Anne Paper Co. mill at Beaupre, Que. When Mead was formed in 1930, Mr. Van de Carr was elected a vice president, becoming executive vice pres. in 1942.

He was first president of Brunswick Pulp & Paper Co., Brunswick, Ga., a Mead affiliate, and also served as a director of Scott Paper Co., Chester, Pa.

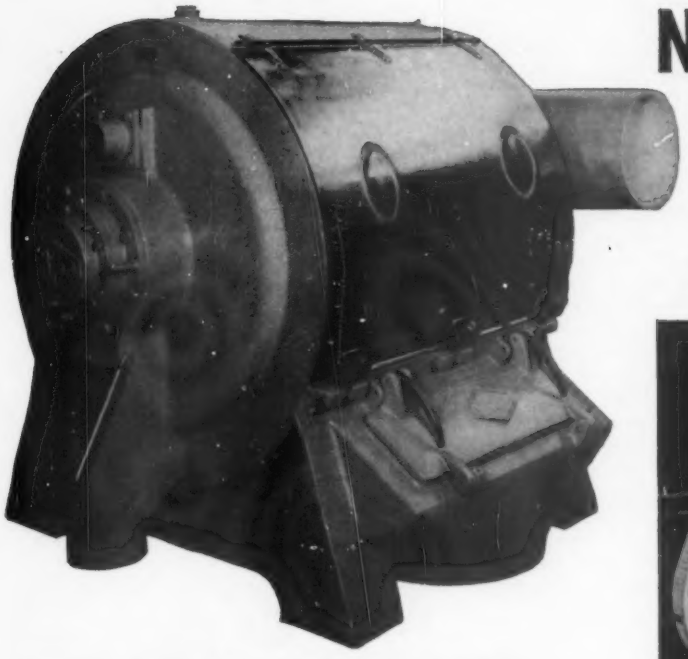
**Alexander Morris** has been named instrument and control supervisor for Gulf States Paper Corp. He will work out of Tuscaloosa, Ala., on assignments in all Gulf States plants. A graduate chemical engineer of Auburn University, he was formerly a department head and construction engineer at Union Bag-Camp in Savannah. . . . **William C. Drake,** chem. engineering graduate of North Carolina State has been named mill process engineer at Ecusta Paper Div. of Olin Mathieson and **Bruce McIntyre,** Clemson engineering graduate, has joined the mill's engineering staff.—William F. Diehl, Jr.

## East

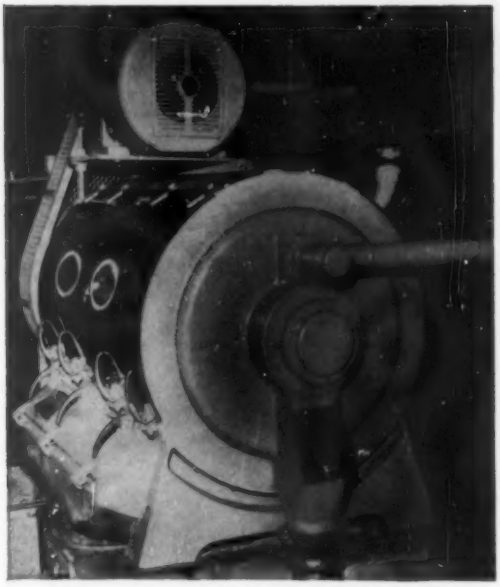
**Walter A. Littlefield,** asst. to the director of research and development, Brown Co., has retired. . . . **Delmont J. Johuis** is now asst. to the vice pres., i/c corporate research, machinery development, and new products, American Can Co. . . . **Thomas B. McCabe Jr.,** director of marketing, Scott Paper Co., is now a director of the Assn. of National Advertisers.

**Harry J. Buncke,** vice president, engineering, Oxford Paper Co., has retired. He joined Oxford in 1933 as chief engineer after some 15 years with Abitibi Power & Paper Co., Ltd. . . . **Theodore H. Geiger** is now staff administrator of Oxford's research dept.

**Leon G. Beekman** is named mgr. of manufacturing at the East Providence, R.I. plant of the Engineering & Machine div., St. Regis Paper Co. With the firm 31 years, he was formerly chief staff industrial engineer in the office of **Willard E. Hahn,** New York, N.Y. Mr. Beekman succeeds **F. G. James,** who recently resigned. (The East Providence plant manufactures packaging equipment and paper converting machinery.) . . . **Frederic C. Faulkner** is named sales representative in northern New Jersey for Stanley Steel



# NEW ADVANCES IN LOW COST QUALITY PULP SCREENING

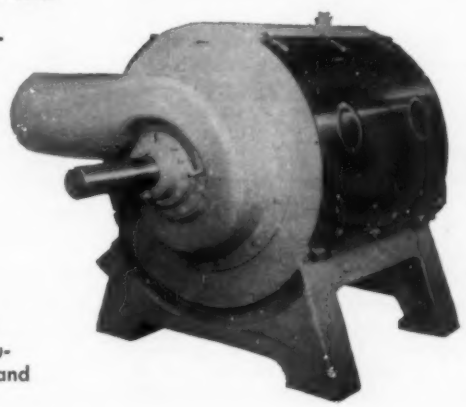


## IMPCO CENTRIFUGAL SCREENS FOR:

**Washed Stock Screening**
**Hot Stock Screening**
**Sealed Black Liquor Knotting**
**Fibre Length Classification**
**Paper Stock Cleaning**

The new Impco Centrifugal Pulp Screen is the latest example of the progress made toward the ultimate in low cost quality screening. This screen incorporates many improved principles and features such as:

- — a stock inlet allowing direct top, bottom, front or rear infeeding which simplifies installation piping;
- — a tangential inlet which changes flow direction from linear to rotating, yet retains velocity head;
- — a special stator which provides uniform internal distribution of pulp;
- — a patented high-efficiency rotor which increases capacity without additional horsepower;*
- — a bottom accepted stock outlet permitting all sub-floor piping;
- — a full length quick-opening door for routine accepted stock sampling;
- — an accessible rejects outlet for tailings inspection or sampling.



These features are resulting in peak capacities and high discharge consistencies at lowest horsepowers. Reject richness is readily controlled. Engineered simplicity is characteristic of the entire line of Impco Centrifugal Screens which require very little operating attention and mechanical maintenance.

* U. S. Patent No. 2,845,848.

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# STRICTLY PERSONAL . . .

Strapping, division of Stanley Works, New Britain, Conn. He formerly held a similar position in Connecticut. . . . **Donald H. Grubb** becomes district sales mgr. for the Hoboken, N.J. box plant of the Hinde & Dauch div., West Virginia Pulp and Paper Co. He has held various positions in corporate headquarters. . . .

**William J. Gehlen** moves from post of manager at Scott Paper Co.'s. Fort Edward mill to be manager of their Chester, Pa. mill succeeding **Bob Thieme**, who has been made vice president.

**Judson Hannigan, Jr.** succeeds O. B. Beyer as manager of International Paper Co.'s Corinth, N.Y. mill.

. . . **James D. Moran** moves up as asst. to the president, The Flintkote Co. . . . **Neal M. Draper** is vice pres., Allied Chemical's National Aniline Div. . . . **Jack W. Long** has joined Dewey and Almy Chemical Div., W. R. Grace & Co., as research chemist in organic chemicals research lab. He was formerly in paper coating research with Potlatch Forests, Inc. . . . **Walter A. Gay**, another newcomer in D&A's lab, will conduct polymer research. . . . Another addition is **Fred P. Tarr** who joins the process development dept. as a development engineer—Maurice R. Castagne.

## Canada

**R. L. Fraser** has been named mill manager, newsprint division at Iroquois Falls, Ont., for Abitibi Power & Paper Co., according to **E. W. McBride**, vice pres., manufacturing. He succeeds **G. J. Morrisette**, who retired in November. . . . **T. Newman McLenaghen**, formerly assistant mill mgr., Pine Falls Division, Abitibi, has been made mill mgr. of Manitoba Paper Co., succeeding Mr. Fraser.

**J. H. Tremblay**, associated with Abitibi for over 45 years, has been appointed mill mgr. at Pine Falls division, where he was formerly gen. supt. The former resident engineer at Iroquois Falls, **J. F. Williams**, has been appointed gen. supt., Pine Falls, with **D. D. Munro** moving from Pine Falls, where he was resident engineer, to Iroquois Falls where he will assume similar duties. Resident engineer for Manitoba Paper Co. is now **W. C. E. Wood**, until recently engineering and maintenance supt. for Abitibi Corp. at Alpena, Mich.

**Irwin H. Groom**, formerly with Canadian Industries, Ltd., has been made mgr. of marketing services, St. Lawrence Corp., and will make his headquarters at Montreal head office.

**Elliott M. Little**, chairman of the board of Anglo-Newfoundland Development Co. and Anglo-Canadian Pulp & Paper Mills, has been named to a Canadian national committee to raise funds for the Memorial University of Newfoundland.

**Robert T. Stewart** and **Beverly O. Machesney** have been appointed product managers for Westminster Paper Co., New Westminster, B.C. Both have been with the company for several years. Mr. Stewart, from Montreal, was until recently assistant to the national retail sales mgr. Mr. Machesney, Ontario-born, was with a retail sales organization in Winnipeg previously.

**Hugh J. Hodgins**, vice pres., Crown Zellerbach Canada presided at the annual sessions of the Western Conservation and Forestry Assn. in Victoria, B.C., attended by several hundred foresters and company executives from Western Canada and the U.S.—Charles L. Shaw

## Allied

**Young**

**Morgan**

**Jones**

**William W. Young** becomes southern regional sales mgr. for American Potash & Chemical, in Atlanta. **Niven D. Morgan, Jr.** replaces Mr. Young at Shreveport, La. **John R. Jones** becomes New York-New England district sales mgr., in New York office.

**Louis Allis Co.**, Milwaukee, has purchased **Dynapar Corp.**, Skokie, Ill. manufacturer of custom electronic equipment. Move is Allis' first step in a "long-range program of expansion and diversification." . . . A new technical service that will deal with nickel alloys at elevated temperatures has been established in the Development & Research div. of **International Nickel Co. Inc.**, New York, N. Y. . . .

**Elmblad**

**Kukral**

**Enroth**

**Schwantes**

**T. R. Elmblad** and **A. C. Kukral** have been named managers of Whiting Corp.'s New York domestic and Cleveland sales offices, respectively. Both were formerly in the Cleveland office, Mr. Elmblad as mgr. . . . **R. J. Enroth** moves from the Chicago office to New York domestic and **F. R. Schwantes** from Chicago to Cleveland.

**Simonds Saw & Steel Co.** has opened a Southern California branch warehouse, sales office and service shop at 1950 E. 20th St., Los Angeles. The facility is a distribution, sales and service center for southern California, Arizona, southern Nevada, New Mexico and the El Paso area of Texas. It will also serve two subsidiaries: **Simonds Abrasive Co.** and **Heller Tool Co.** . . . Chemical engineering advances on the Gulf Coast and the Southwest will be theme of the 44th national meeting of the American Institute of Chemical Engineers, to be held at the Hotel Roosevelt, New Orleans, La., February 26-March 1. Symposium subjects will include, "Plastic and Fiber Plant Growth on the Gulf Coast."

**Perkins-Goodwin Co.** has moved its headquarters to 1 Rockefeller Plaza, New York 20, N. Y. Offices were formerly at 589 Fifth Ave., New York 17. . . . **Heil Co.**, Milwaukee, has acquired the materials handling equipment business of the Ingersoll Kalamazoo div., **Borg-Warner Corp.** Machinery and fixtures are to be moved from Kalamazoo, Mich., to Heil's main plant in Milwaukee and will be operated as part of the latter firm's Body & Hoist div.

## Let TITANOX-A-CG
## help make sales through the mails

The eagerly awaited catalog can be a star salesman, especially when well known TITANOX titanium dioxide pigment has boosted the brightness and opacity of its pages while keeping weight down. And for outstanding pages that require coated stock there is new TITANOX-A-CG.

TITANOX-A-CG is the coating grade anatase titanium dioxide pigment so well suited to the high solids, high speed coatings applied by all modern coating methods including the trailing blade coater. This pigment is equally suitable to other processes such as size press and calender application.

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# CHEMICALS

### U. S.-U. K. Firm to Make Titanium Dioxide

Formation of a joint operation to manufacture titanium dioxide on the West Coast is announced by American Potash & Chemical Corp., Los Angeles, and Laporte Industries Ltd. AP&C will own 85% of the enterprise, while the balance is to be held by Laporte Titanium Ltd., one of the two large producers in the United Kingdom. Laporte Titanium will furnish process information and know-how. American Potash will handle construction and operation. Initial capacity: 25,000 annual tons. Estimated capital investment: $15,000,000. Production set for late 1962.

### Sulphur Plant on Gulf Shore in Production

Freeport Sulphur Co. has placed in operation a new sulfur mine at Lake Pelto on the marshland shore of the Gulf about 60 miles southwest of New Orleans.

### U. S. Industrial Chemicals Sets Up Resin Production

Low- and medium-density Grex polyethylene resins will be produced to W. R. Grace & Co. specifications by U. S. Industrial Chemicals Co. at its Houston, Texas plant. These resins, made from ethylene supplied by Grace, are to be used in production of paper coatings, film, insulation, etc. Densities will be from 0.912 to 0.933 and the melt indices from 0.3 to 70.0.

### New Meer Facilities

To meet the increased gum requirements of the paper and other industries, Meer Corp. has installed a new automatic milling and processing system at its Bergen, N. J. plant. Operation is capable of producing 5,000,000 lbs. water-soluble gums and gum products annually. Gum compounds increase paper strength, permit use of longer pulp fibers, allow for less mechanical fiber refinement, help increase starch retention and improve printability, brightness, opacity.

### Borden (Canada) Expands

Construction by Borden Chemical Co. (Canada) Ltd. of manufacturing facilities for production of polyvinyl acetate emulsions; polystyrene and acrylic emulsions, and liquid urea resins is announced by President Gerald J. Ray. Project costing $250,000 is now in progress.

### Packaging and Paper Converting Adhesives

Wide range of applications for five types of adhesives for packaging and paper converting is described in 16-page catalog (No. A 100) issued by Armour Alliance Industries, 16123 Armour St. NE, Alliance, Ohio. Booklet details features and physical and chemical properties of Seban, a liquid polyvinyl resin; Armodex, a liquid dextrin-based formulation; Flexglu, a formulated cake-type animal glue-based adhesive; Driflex, a formulated dry granular animal glue-based adhesive, and Armoglu, a formulated animal glue-based adhesive.

### Spray Adhesive

Development of a low-viscosity vegetable-based adhesive designed specifically for adhesive spray applications in paper mill roll-heading or mill-end-wrapping applications is announced by Borden Chemical Co., a division of Borden Co., Dept. H, 350 Madison Ave., New York 17, N. Y. Cascola CS-257 is said to atomize at extremely low spray pressures, is non-clogging and fast-setting. Can be used on virtually all conventional spray equipment.


Are you interested in research?

Something pretty interesting is going on, research-wise, at Beloit Iron Works, Beloit, Wisconsin, where some of the world's largest paper machines are made. A new Research and Development Center, nearly completed, will provide 45,000 square feet of modern facilities for "paperesearch" by this internationally known company (est. 1858). If you are an engineer with a Bachelor's, Master's, or Doctor's degree and interested in research, look into this! Your specific areas of interest may cover pulp and paper, heat transfer, electronics and instrumentation, fluid mechanics, and mechanics. The man to query is Jerry Gannon, Employment Manager, Dept. D, Beloit Iron Works, Beloit Wisconsin.

**CHEMICAL ENGINEER**

Position open for Technical Service Representative. Two to four years engineering experience required, preferably in pulp and paper. Salary commensurate with qualifications. Send transcript of academic training and personal resume to:

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Hooker Chemical Corporation
Tacoma, Washington

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Operating Superintendent. Twelve years experience in all phases of kraft pulping, recovery and bleaching both technical and operations. Pulp and Paper graduate. Write Box P-320, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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Manufacturer's Representatives with non-competitive lines calling on pulp and paper mills with our line of both low and high pressure stock and gate valves in Northwest, Midwest and South. Contact Mr. Roger Dufort, Sales Manager, PLATTSBURGH FOUNDRY & MACHINE CO., INC., Plattsburgh, New York.

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MILLER FREEMAN PUBLICATIONS

# The last word

## The Editor Returns

Completing an eight-month editorial and reporting trip to Europe, Editor Albert W. Wilson returns to the U.S. and to editorial headquarters in New York City.

Armed with additional background information through further study of the European scene, visits to pulp and paper mills, technical meetings and interviews with economic leaders, Mr. Wilson will present penetrating technical and economic analyses of the world pulp and paper industry for readers of this magazine.

Mr. Wilson has agreed to fulfill a promise made some months ago to officers of the Valley Industrial Salesmen's Assn. in the Appleton-Neenah area of Wisconsin and to Metropolitan TAPPI to speak on his travels and observations of pulp and paper industry in many countries from Britain and Spain, to Russia, Poland and Scandinavia. He will address one of the VISA spring meetings and the TAPPI March 14th meeting. ■

## Welcome to new staff member,

Stan M. Jepson, who has joined the Midwest reporting staff of PULP & PAPER. Mr. Jepson has reported on the forest industry for many years for Miller Freeman Publications and its companion publications, THE TIMBERMAN and THE LUMBERMAN. A graduate forester, his experience will team well with that of Midwest Editor Don W. Zeigler. ■

## A major industry problem

is distribution and merchandising, a paper company research director told us over lunch last week. He sees increased activity by pulp and paper companies to get into "more profitable" operations of converting and distributing. This was a noted trend in the fifties, but there will be some major steps in this direction by some "pretty big companies—and real soon," he says. ■

## Cost control does work

if you put your mind to it, which obviously St. Regis Paper Co. has done. Speaking to members of the Metropolitan District of Empire State TAPPI, W. R. Adams, president of St. Regis, said that a little setback, such as the "unsatisfactory 1960" doesn't do any harm and, in fact, makes a company more cost conscious. "We set as a goal to save $10 million, about 2% of sales. We will far exceed that goal this year," he stated.

## Taking an "upbeat look,"

Mr. Adams said with a smile: "The sixties may be just beginning. After all, our numbering systems begin on one, not zero—so maybe the sixties should start with 1961 instead of 1960." Optimistically, he sees better conditions at the end of 1961 than we had at 1960's end.

## Other perceptive comments

by the head of the nation's third largest paper company and jotted down in our notebook:

A cultural paper explosion will follow population growth. It will result, says Mr. Adams, from the need for more schools for children who will need more incisive teaching, will have more intense cultural tastes when they graduate, all of which can only be satisfied by the printed word.

## More paper is used by plastics

than is displaced by plastics, says Mr. Adams. He cited a company study which estimated that plastics replaced about 400,000 tons of paper in 1959, while it used about 500,000 tons of paper. He thought this last estimate was on the low side and said with a rate of exchange like that, we don't have too much to worry about.

## Vast by-products developments

may be next important cycle, he predicts. The 50% of the wood we aren't using now may be more valuable than oil or coal as fuel, he hints. And, of course, it would be a renewable raw material.

His comments are backed by reality. As reported earlier in this issue (PRODUCTION), Crown Zellerbach Corp. has just brought into operation two chemical plants adjacent to its Bogalusa, La., pulp mill, adding some 15 million lbs. to its lignin by-product capacity.

An increasing share of productive effort is going into organic chemical products from complex wood elements, says President David L. Luke, West Virginia Pulp and Paper Co. In 1960, the company produced 64,234 tons. Active carbon, tall oil and lignin are some of the chemical products now marketed by West Virginia. "Our polychemicals division," says Mr. Luke, "appears to be at a turning point. . . . We expect this division to become a gradually increasing contributor to earnings." ■

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